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U. S. DEPARTMENT OF AGRICULTURE,
DIVISION OF ENTOMOLOGY—BULLETIN No. 47.
L. O. HOWARD, Entomologist.

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CATALOGUE

OF THE

EXHIBIT OF ECONOMIC ENTOMOLOGY

AT THE

LOUISIANA PURCHASE EXPOSITION, ST. LOUIS, MO., 1904.

COMPILED UNDER THE DIRECTION OF THE ENTOMOLOGIST
BY
E. S. G. TITUS AND F. C. PRATT.

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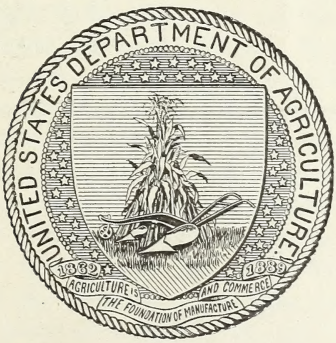

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1904.

LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Division of Entomology,
Washington, D. C., March 25, 1904.

Sir: I have the honor to transmit herewith for publication, as Bulletin No. 47, of this Division, a catalogue of the exhibit made by the Division of Entomology at the Louisiana Purchase Exposition.

Respectfully,

L. O. Howard.
Entomologist.

Hon. James Wilson,
Secretary of Agriculture.

INTRODUCTION.

The following catalogue of the exhibit of economic entomology made by the Division of Entomology, U. S. Department of Agriculture, at the Louisiana Purchase Exposition, has been prepared with a view of increasing the usefulness of the exhibit from an economic and educational standpoint, and it is intended to supplement the exhibit by giving bibliographical references which will enable persons interested readily to gain information additional to that conveyed by the label. The general supervision of the preparation of the exhibit itself was placed by the writer in the hands of Mr. August Busck, assistant in the Division of Entomology, and in this laborious task he has had the valuable expert assistance of Mr. F. C. Pratt and Mr. E. S. G. Titus, also assistants in the Division. The catalogue itself has been compiled by Messrs. Titus and Pratt. The present catalogue does not include a consideration of the exhibit of insects injurious to forest trees, which will be published as a separate pamphlet on account of the desirability of independent distribution of this portion of the catalogue to persons interested in forestry matters.

The Division of Entomology has been represented at many international expositions, its first serious attempt to represent its work in this way having been made at the New Orleans Cotton Exposition of 1884. It was represented by large collections at the subsequent World's Fair at Chicago, at the International Exposition at Paris, at the expositions at Atlanta, Nashville, Omaha, Buffalo, and Charleston. The present exhibit, however, is, in many respects, a more interesting one than any of its predecessors. An effort has been made to illustrate in all of their stages the principal insects injurious to North American crops. Further attempts have been made to show the economic relations of insects in other respects and, on account of the great current interest in the subject of the spread of disease by insects, more attention has been paid to this subject than ever before. Special cases illustrating insects of the greatest immediate popular interest have been prepared, and a series of models of the most prominent economic insects of the day is shown. An effort has been made to introduce a novel feature in this exhibit, namely, living insects feeding under as natural conditions as possible, which will probably prove of quite as great interest to visitors as the illustrative cases of dried specimens.

In the bibliographical references under the titles of the individual exhibits in this catalogue the most comprehensive general articles have been indicated, and especial care has been taken to quote such publications as are most accessible. Reference to many of the earlier articles may be found in Bul. 31, Div. Ent., U. S. Dept. Agric., 1893, this being an index to the exhibit at the World's Columbian Exposition. In the systematic index the more important recent changes in entomological nomenclature have been cared for by cross references from old names to new names for both genera and species.

Persons desiring further information than can be gained from this catalogue or from conversation with the attendant in charge of exhibit are requested to address the writer at the U. S. Department of Agriculture, Washington, D. C.

L. O. Howard,
Entomologist.

CONTENTS.

ORDER OF CASES IN EXHIBIT.

	Page.
Insects injurious to orange and lemon (4 cases)	7
The more important scale insects (6 cases)	13
Insects injurious to apple (6 cases)	19
The periodical cicada	27
The white-marked tussock moth and its parasites	28
Insects injurious to peach	29
Insects injurious to pear	31
Insects injurious to plum	32
Principal insects liable to be introduced on nursery stock (2 cases)	32
Insects injurious to grape (2 cases)	37
Insects injurious to cotton (4 cases)	41
The cotton bollworm; corn-ear worm	41
Insects injurious to Indian corn (4 cases)	49
Insects injurious to sugar cane	57
Insects injurious to rice	57
Insects injurious to grasses and alfalfa (2 cases)	58, 60
Insects injurious to small grains (wheat, oats, rye, barley, etc.), (3 cases)	61
Insects injurious to hop	65
Insects injurious to clover (4 cases)	66
Insects injurious to sugar beet (4 cases)	75
Insects injurious to tobacco (2 cases)	80
Insects injurious to beans and peas (2 cases)	83
Insects injurious to crucifers (cabbage, cauliflower, cress, mustard, etc.), (2 cases)	87
Insects injurious to potato	91
Insects injurious to sweet potato	94
Insects injurious to tomato	95
Insects injurious to asparagus	96
Insects injurious to cucurbits (melons, cucumbers, squashes, pumpkins, etc.)	98
Insects injurious to other garden vegetables (celery, parsley, parsnip, carrot, onion, rhubarb)	100
Insects injurious to ornamental plants	102
Insects injurious to cranberry	104
Insects injurious to strawberry	105
Insects injurious to raspberry and blackberry	107
Insects injurious to currant and gooseberry	109
Insects injurious to stored products (2 cases)	111
Household insects	115
Insects which may spread disease	118
Insects which directly injure or annoy human beings	119
Insects injurious to domestic animals	120
Ticks injurious to domestic animals	123

SPECIAL CASES.

Page.
The San Jose scale 17
The periodical cicada 27
The white-marked tussock caterpillar and its parasites 28
The cotton bollworm; corn-ear worm 41
The Mexican cotton boll weevil 42

MISCELLANEOUS EXHIBITS.

Exhibit of models of insects, and of insects and injured plants 124
Exhibit of "Riker" mounts of insects and plants which they attack 130
Exhibit of native silk moths 131

INDEX TO INSECTS EXHIBITED.

Systematic names 133
Common names 145

CATALOGUE OF THE EXHIBIT OF ECONOMIC ENTOMOLOGY AT THE LOUISIANA PURCHASE EXPOSITION.

INSECTS INJURIOUS TO ORANGE AND LEMON.

For general articles relating to insects affecting these fruits see Hubbard, 1885, and Insects Affecting the Orange, U. S. Dept. Agric., Marlatt, Scale Insects and Mites of Citrus Fruits, Farmers' Bul. 172, 1903.

THE APPLE TWIG-BEETLE.

Stephanoderes hispidulus Lec.

(Formerly *Hypothenemus eruditus* auct.)

EXHIBIT: Adult and work.

THE OAK AMBROSIA BEETLE.

Xyleborus affinis Eichh.

For general account see Hubbard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 19–20, 1897, under *X. pubescens* Zimm.

EXHIBIT: Adult, work, and figure.

THE PAN-AMERICAN PLATYPUS.

Platypus compositus Say.

For general article see Hubbard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 14–16, 1897.

EXHIBIT: Adult, work, and figure.

FULLER'S ROSE BEETLE.

Aramigus fulleri Horn.

For general account of life history see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 88–96, 1901.

EXHIBIT: Adult.

THE COFFEE-BEAN WEEVIL.

Arœcerus fasciculatus De G.

For partial life history and general account see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., pp. 36–38, 1897.

EXHIBIT: Adult and work.

THE ORANGE CHRYSOBOTHRIS.

Chrysobothris chrysœla Ill.

EXHIBIT: Adult.

EPITRAGUS TOMENTOSUS Lec.

EXHIBIT: Adult.

PACHNÆUS DISTANS Horn.

EXHIBIT: Adult.

ORANGE LEAF-NOTCHER.

Artipus floridanus Horn.

EXHIBIT: Adult and work.

THE ORANGE SAWYER.

Elaphidion inerme Newm.

For general account see Chittenden, Bul. 18, n. s., Div. Ent., U. S. Dept. Agric., p. 41, 1898.

EXHIBIT: Adult and work.

LEPTOSTYLUS BIUSTUS Lec.

EXHIBIT: Adult and work.

THE ORANGE DOG; HOG CATERPILLAR.

Papilio thoas Linn.

(Also called *P. cresphontes.*)

For brief account of larva see Lintner, 9th Rpt. State Ent. N. Y., pp. 336–337, 1893.

EXHIBIT: Eggs, larva, chrysalis, adult, and figure.

ORANGE LEAF-ROLLER.

Platynota rostrana Walk.

EXHIBIT: Eggs, pupa, and adult.

THE SADDLE-BACK CATERPILLAR.

Sibine stimulea Clem.

(Formerly *Empretia.*)

For general account see Lugger, 4th Rept. State Ent. Minn., pp. 98–99, 1899.

EXHIBIT: Pupa, adult, and figure.

THE COMMON BAGWORM.

Thyridopteryx ephemeræformis Steph.

For general account see Packard, 5th Rpt. U. S. Ent. Com., pp. 258–262, 1890.

EXHIBIT: Larva, cocoon, adult, and figure.

THE STINGING CATERPILLAR.

Megalopyge opercularis S. and A.

For short account see Lugger, 4th Rpt. State Ent. Minn., pp. 95–96, 1899.

EXHIBIT: Cocoon and adult.

THE SKIFF CATERPILLAR.

Prolimacodes scapha Harr.

(Larva feeds on leaves.)

EXHIBIT: Adult.

THE ORANGE CASE-BEARER.

Eurycyttarus confederata Grt.

(Larvæ feed upon lichens on tree trunk, occasionally gnawing fruit; formerly *Psyche*.)

EXHIBIT: Cases on twig.

THE TWO-SPOTTED RED SPIDER.

Tetranychus bimaculatus Harr.

For description and distribution see Banks, Tech. series 8, Div. Ent., U. S. Dept. Agric., pp. 73–74, 1900.

For general account see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 35–42, 1901.

EXHIBIT: Figure.

THE ORANGE WHITE SPOT.

Tetranychoides californica Bks.

For description see Banks, Journ. N. Y. Ent. Soc., v. XII, p. 54, pl. II, fig. 1, 1904.

EXHIBIT: Work and figure.

THE ORANGE FRUIT MITE.

Tenuipalpus californicus Bks.

For description see Banks, Journ. N. Y. Ent. Soc., v. XII, p. 55, pl. II, fig. 2, 1904.

EXHIBIT: Work and figure.

RUST MITE OF THE ORANGE; THE SILVER MITE OF THE LEMON.

Eriophyes oleivorus Ashm.

(Formerly *Phytoptus*.)

EXHIBIT: Figure.

THE TWO-STRIPED WALKING-STICK.

Anisomorpha buprestoides Stäl.

EXHIBIT: Nymph and adult.

THE ANGULAR-WINGED KATYDID.

Microcentrum retinerve Burm.

EXHIBIT: Eggs, adult, and parasitized eggs.

NORTHERN MOLE CRICKET.

Gryllotalpa borealis Burm.

EXHIBIT: Nymph and adult.

THE LUBBER GRASSHOPPER.

Dictyophorus reticulatus Thunb.

For brief account see Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agr., pp. 28–29, 1901.

EXHIBIT: Nymph and adult.

THE COTTON STAINER.

Dysdercus suturellus H-Schf.

For short accounts see Howard, Farmers' Bul. 47, U. S. Dept. Agric., pp. 30–31, 1897; Insect Book, p. 308, fig. 201 and pl. 31, fig. 15, 1901.

Exhibit: Nymph, adult, and figure.

EUTHOCTHA GALEATOR Fab.

Exhibit: Adult.

THE SOUTHERN LEAF-FOOTED PLANT-BUG.

Leptoglossus phyllopus Linn.

For general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 46–48, 1899.

Exhibit: Adult.

EUSCHISTUS SERVUS Say.

Exhibit: Adult.

NEZARA HILARIS Say.

Exhibit: Adult.

WHITE FLY; MEALY WING.

Aleyrodes citri R. & H.

For general account see Marlatt, Farmers' Bul. U. S. Dept. Agric., 172, pp. 36–38, 1903.

Exhibit: Adult, work and figure.

ORANGE APHIS; COTTON APHIS.

Aphis gossypii Glover.

(Curls leaves and stops young growth; usually well controlled by parasites and other enemies.)

For short account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 58–61, 1903.

Exhibit: Eggs, adult, work, figure, and the enemies: *Baccha clavata*, *Hemerobius* sp., *Chrysopa plorabunda*, and a hymenopterous parasite.

COTTONY CUSHION SCALE; FLUTED SCALE.

Icerya purchasi Mask.

(Food plants: Acacia, cypress, grasses, lemon, orange, pine, rose; see under "The more important scale insects" for life history and enemies.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 25–27, 1903.

Exhibit: Infested twig.

THE DESTRUCTIVE MEALY-BUG.

Pseudococcus citri Risso.

(Formerly *Dactylopius destructor*.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 99–100, 1903.

Exhibit: Infested leaves.

THE LONG-SPINED MEALY-BUG.

Pseudococcus longispinus Targ.

(Formerly *Dactylopius* spp. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 104–105, 1903.

EXHIBIT: Infested leaves.

THE FLORIDA WAX-SCALE.

Ceroplastes floridensis Comst.

(Food plants: Citrus, fig, myrtle, oleander.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 157, 1903.

EXHIBIT: Infested leaves.

THE BARNACLE SCALE.

Ceroplastes cirripediformis Comst.

(Food plants: Myrtle, orange, persimmon, quince.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 150, 1903.

EXHIBIT: Infested leaves.

THE SOFT SCALE.

Coccus hesperidum Linn.

(Food plants: Laurel, lemon, myrtle, oleander, orange, etc.; formerly a *Lecanium;* see under "More important scale insects.")

For bliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 168–170, 1903.

EXHIBIT: Infested twig.

THE HEMISPHERICAL SCALE.

Saissetia hemisphærica Torg.

(Food plants: Oleander, orange, peach, etc.; formerly a Lecanium; see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 202–203, 1903.

EXHIBIT: Infested twig.

THE BLACK SCALE.

Saissetia oleæ Bern.

(Food plants: Apple, apricot, olive, orange, pear, plum, rose; formerly a Lecanium; see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 205–206, 1903.

EXHIBIT: Infested twig.

THE OLEANDER SCALE.

Aspidiotus hederæ Vall.

(Food plants: Currant, box, cherry, olive, oleander, orange, etc.; formerly *A. nerii* Bouché; see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 260–264, 1903.

Exhibit: Infested twig.

THE ORANGE CHIONASPIS.

Chionaspis citri Comst.

(Food plants: Euonymus, orange, palms; see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bull. 88, Mass. Agr. Coll., pp. 214–215, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 270, 1901.

Exhibit: Infested twig.

THE RED SCALE OF CALIFORNIA.

Chrysomphalus aurantii Mask.

(Food plants: Agave, apple, fig, grape, lemon, orange, pear, plum, quince, willow, etc., formerly *Aspidiotus*; see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 287–288, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 268, 1901.

Exhibit: Infested twig.

THE CIRCULAR SCALE.

Chrysomphalus ficus Ashm.

(Food plants: Lemon, oleander, orange, palm, rose, etc.; see under "More important scale insects.")

For bibliography and food plants see *Chrysomphalus aonidum*, Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 286–287, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 269, 1901.

Exhibit: Infested twig.

THE PURPLE SCALE.

Lepidosaphes beckii Newm.

(Food plants; Citron, fig, lemon, oak, orange. Formerly known as *Mytilaspis citricola* Glov.; see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 305–306, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 261, 1901.

Exhibit: Infested twig.

GLOVER'S SCALE; LONG SCALE.

Lepidosaphes gloveri Pack.

(Food plants: Lime, magnolia, orange, palms. Formerly called *Mytilaspis;* see under "More important scale insects," for figures and enemies.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 309, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 265, 1901.

EXHIBIT: Infested twig.

THE CHAFF SCALE.

Parlatoria pergandei Comst.

(Food plants: Japonica, lemon, orange; see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 319–320, 1903; Marlatt, Yearbook U. S. Dept. Agric., 1900, p. 270, 1901.

EXHIBIT: Infested twigs.

THE MORE IMPORTANT SCALE INSECTS.

COTTONY CUSHION SCALE; FLUTED SCALE.

Icerya purchasi Mask.

(Food plants: Acacia, cypress, grasses, lemon, orange, pine, rose; etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 25–27, 1903.

EXHIBIT: Infested twigs, illustrations and enemies: *Chilocorus cacti*, *Corizus hyalinus*, *Novius cardinalis*, and *Piesma cinerea.*

THE LONG-SPINED MEALY-BUG.

Pseudococcus longispinus Targ.

(Formerly *Dactylopius* spp.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 104–105, 1903.

EXHIBIT: Infested leaves and figures.

THE DESTRUCTIVE MEALY-BUG.

Pseudococcus citri Risso.

(Formerly *Dactylopius destructor.*)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 99–100, 1903.

EXHIBIT: Infested leaves.

COTTONY MAPLE SCALE.

Pulvinaria innumerabilis Rathv.

(Food plants: Alder, apple, box-elder, elm, grape, linden, maples, oak, willow, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 134–135, 1903; Howard, Bul. 22, n. s. Div. Ent. U. S. Dept. Agric., pp. 8–16, 1900, figs.

Exhibit: Infested twigs and figures.

THE BARNACLE SCALE.

Ceroplastes cirripediformis Comst.

(Food plants: Myrtle, orange, persimmon, quince.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 150, 1903.

Exhibit: Infested twig.

THE FLORIDA WAX-SCALE.

Ceroplastes floridensis Comst.

(Food plants: Citrus, fig, myrtle, oleander.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 157, 1903.

Exhibit: Infested twigs.

THE SOFT SCALE.

Coccus hesperidum Linn.

(Food plants: Laurel, lemon, myrtle, oleander, orange, etc.; formerly a *Lecanium*.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 168–170, 1903.

Exhibit: Infested twigs and figures.

THE TERRAPIN SCALE.

Eulecanium nigrofasciatum Perg.

(Food plants: Apple, birch, linden, maple, peach, plum, sycamore; formerly *Lecanium*.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 191, 1903; Pergande, Bul. 18, n. s. Div. Ent., U. S. Dept. Agric., pp. 26–29, 1898, figs.

Exhibit: Infested twig and figures.

THE HEMISPHAERICAL SCALE.

Saissetia hemisphærica Targ.

(Food plants: Oleander, orange, peach, etc.; formerly a *Lecanium*.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 202–203, 1903.

Exhibit: Infested twig.

THE BLACK SCALE.

Saissetia oleæ Bern.

(Food plants: Apple, apricot, olive, orange, pear, plum, rose; formerly a *Lecanium*.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 205–206, 1903.

EXHIBIT: Infested twig, and parasite *Coccophagus cognatus* How.

THE ORANGE CHIONASPIS.

Chionaspis citri Comst.

(Food plants: Enonymus, orange, palms, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 214–215, 1903; Marlatt, Yearbook, U. S. Dept. Agric., f. 1900, p. 270, 1901.

EXHIBIT: Infested twig.

THE SCURFY BARK-LOUSE.

Chionaspis furfura Fitch.

(Food plants: Apple, cherry, currant, elm, pear, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 217–219, 1903; Howard, Yearbook, U. S. Dept. Agric., f. 1894, pp. 259–261, 1895, figs.; Banks, Bul. 34, Div. Ent., U. S. Dept. Agric., p. 14, 1902.

EXHIBIT: Infested twig and figures.

THE WEST INDIAN PEACH SCALE.

Diaspis pentagona Targ.

For bibliography and partial list of food plants under *Aulacaspis* see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 234–235, 1903; Riley and Howard, Ins. Life, Vol. VI, pp. 287–295, 1894, figs.; Banks, Bul. 34, Div. Ent., U. S. Dept. Agric., p. 21, 1902.

EXHIBIT: Infested twigs and figures.

THE ROSE SCALE.

Aulacaspis rosæ Bouche.

(Food plants: Blackberry, mango, myrtle, pear, raspberry, rose, Cycas, Ailanthus, etc.)

For bibliography see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 236, 1903; Banks, Bul. 34, Div. Ent., U. S. Dept. Agric., p. 23, 1902.

EXHIBIT: Infested twig and figure.

THE HORSE-CHESTNUT SCALE.

Aspidiotus æsculi Johns.

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 251–252, 1903.

EXHIBIT: Infested twigs.

PUTNAM SCALE; CRANBERRY SCALE.

Aspidiotus ancylus Putn.

(Food plants: Apple, apricot, box-elder, cottonwood, cranberry, elm, hemlock, maple, oak, peach, pear, plum, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 252–253, 1903.

Exhibit: Infested twig.

THE LINDEN SCALE.

Aspidiotus diffinis Newst.

(Food plants: Basswood, lilac.)

For bibliography see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 257, 1903.

Exhibit: Infested twigs.

THE EUROPEAN FRUIT SCALE.

Aspidiotus ostreæformis Curt.

(Food plants: Apple, cherry, maple, oak, peach, pear, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 268–270, 1903.

Exhibit: Infested twig and figures.

THE CHERRY; FORBES' SCALE.

Aspidiotus forbesi Johns.

(Food plants: Apple, cherry, currant, honey locust, peach, pear, plum, walnut, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 259–260, 1903.

Exhibit: Infested twig and figure.

THE GRAPE SCALE.

Aspidiotus uvæ Comst.

(Food plants: Grape, hickory.)

For bibliography see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 280, 1903.

Exhibit: Infested twig and figure.

THE WALNUT SCALE.

Aspidiotus juglans-regiæ Comst.

(Food plants: Ash, cherry, crab apple, currant, English walnut, locust, peach, pear, prune, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 265, 1903.

Exhibit: Infested twig and figure.

PALM SCALE.

Aspidiotus lataniæ Sign.

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 266–267, 1903.

EXHIBIT: Infested twig and leaves.

THE SAN JOSE SCALE.

Aspidiotus perniciosus Comst.

(Food plants: Almond, apple, apricot, birch, black walnut, black currant, catalpa, chestnut, crab apple, crab grass, cherry, grape, hickory, oak, peach, pear, persimmon, plum, poplar, prune, Rocky Mountain cherry, rose, silver maple, willow, and many other plants.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 271–275, 1903; Howard and Marlatt, Bul. 3, n. s. Div. Ent. U. S. Dept. Agric., 1896, 80 pp.

EXHIBIT: Infested twig, fruit, figures, and enemies: *Smilia misella* Lec., adult and figure; *Chilocorus similis* Rossi, larva, pupa, adult, and figure; parasite *Aphelinus diaspidis* How., adult and figure.

THE GREEDY SCALE.

Aspidiotus rapax Comst.

(Food plants: Cottonwood, maple, olive, pear, quince, apple, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 276–278, 1903.

EXHIBIT: Infested twig and figure.

THE OLEANDER SCALE.

Aspidiotus hederæ Vall.

(Food plants: Currant, box, cherry, olive, oleander, orange, etc.; formerly *A. nerii* Bouché.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 260–264, 1903.

EXHIBIT: Infested twig and figure.

THE CIRCULAR SCALE.

Chrysomphalus ficus Ashm.

(Food plants: Lemon, oleander, orange, palm, rose, etc.; formerly *Aspidiotus.*)

For bibliography and food plants see *Chrysomphalus aonidum*, Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 286–287, 1903; Marlatt, Yearbook U. S. Dept. Agric. f. 1900, p. 269, 1901.

EXHIBIT: Infested twig and figure.

25528—No. 47—04——2

THE CALIFORNIA RED SCALE.

Chrysomphalus aurantii Mask.

(Food plants: Agave, apple, fig, grape, lemon, orange, pear, plum, quince, willow, etc.; formerly *Aspidiotus.*)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 287–288, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 268, 1901.

Exhibit: Infested twig and figure.

GLOVER'S SCALE; LONG SCALE.

Lepidosaphes gloveri Pack.

(Food plants: Lime, magnolia, orange, palms; formerly *Mytilaspis.*)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 309, 1903; Marlatt, Yearbook, U. S. Dept. Agric, 1900, p. 265, 1901.

Exhibit: Infested twig, figures, and the following enemies: *Chilocorus bivulnerus* Muls., *C. cacti* Linn., *Coccinella abdominalis* Say, *C. californica* Mann., *C. sanguinea* Linn., *C. oculata* Fabr., *Dakruma coccidivora* Comst., *Exochomus contristatus* Muls., *Hippodamia ambigua* Lec., *H. convergens* Guen., *Hyperaspidius coccidivora* Ashm., *Scymnus bioculatus* Muls., *S. cervicalis* Muls.

OYSTER-SHELL BARK-LOUSE.

Lepidosaphes ulmi Linn.

(Attacks principally apple, currant, Cornus, cottonwood, lilac, pear, sassafras, etc.; formerly called *Mytilaspis pomorum* Bouché.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 314–317, 1903.

Exhibit: Infested twig and figure.

THE PURPLE SCALE.

Lepidosaphes beckii Newm.

(Food plants: Citron, fig, lemon, oak, orange; formerly known as *Mytilaspis citricola* Glov.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 305–306, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 261.

Exhibit: Infested twig and figure.

THE CHAFF SCALE.

Parlatoria pergandei Comst.

(Food plants: Japonica, lemon, orange.)

For bibliography and food-plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 319–320, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 270.

Exhibit: Infested twigs and figure.

WHITE FLY; MEALY WING.

Aleyrodes citri R. & H.

For general articles see Marlatt, Farmers' Bul. 172, U. S. Dept. Agric., pp. 36–38, 1903; also Ins. Life, v. V, pp. 219–226, 1893.

EXHIBIT: Adult, work, and figure.

INSECTS INJURIOUS TO APPLE.

For special treatises on apple insects see Bruner, Trans. Nebr. St. Hort. Soc. f. 1894, pp. 155–223, 1895; Harvey and Munson, Bul. 56, Maine Agr. Expt. Sta., 1899; Saunders, Insects Injurious to Fruits, 2d ed., pp. 13–139, 1900.

INJURING THE ROOTS.

THE WOOLLY APPLE APHIS.

Schizoneura lanigera Hausm.

For general account see Marlatt, Cir. 20, Div. Ent., U. S. Dept. Agric., 1897.

EXHIBIT: Work, figure, parasite, *Aphelinus mali* Hal.; and enemy *Scymnus cervicalis* Muls.

INJURING THE TRUNK.

FLAT-HEADED APPLE-TREE BORER.

Chrysobothris femorata Fab.

For general account see Chittenden, Cir. 32, Div. Ent., U. S. Dept. Agric., pp. 9–12, 1898.

EXHIBIT: Adult, work, and figure.

ROUND-HEADED APPLE-TREE BORER.

Saperda candida Fab.

For general account see Chittenden, Cir. 32, Div. Ent., U. S. Dept. Agric., pp. 1–8, 1898.

EXHIBIT: Adult, work, and figure.

APPLE-WOOD STAINER; PIN-BORER.

Pterocyclon mali Fitch.

(Formerly *Monarthrum*.)

For general account of this and an allied species, *M. fasciatum*, see Hubbard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 26–28, 1897.

EXHIBIT: Adult and figure.

INJURING THE BRANCHES.

THE APPLE-TREE PRUNER.

Elaphidion villosum Fabr.

For full account and food plants see Chittenden, Bul. 18, n. s., Div. Ent., U. S. Dept. Agric., pp. 35–40, 1898.

Exhibit: Adult, work, and figure.

THE NEW YORK WEEVIL.

Ithycerus noveboracensis Först.

For general account see Lugger, 5th Rpt. St. Ent. Minn., pp. 187–189, 1899.

Exhibit: Adult and work.

THE APPLE TWIG-BORER.

Amphicerus bicaudatus Say.

For general account see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 11–13, fig., 1898.

Exhibit: Adult, work, and figure.

THE APPLE TWIG-BEETLE.

Stephanoderes hispidulus Lec.

(Formerly called *Hypothenemus.*)

Exhibit: Adult and work.

PEAR-BLIGHT BEETLE; SHOT-BORER.

Xyleborus pyri Peck.

(Formerly called *X. dispar.*)

For general account see Hubbard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 22–23, 1897.

Exhibit: Adult and work.

THE COSMOPOLITAN AMBROSIA BEETLE.

Xyleborus saxeseni Ratz.

(Formerly called *X. xylographus.*)

For general account see Hubbard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 24–26, 1897.

Exhibit: Adult.

FRUIT-TREE BARK BEETLE; THE SHOT-HOLE BORER.

Scolytus rugulosus Ratz.

For general account see Chittenden, Cir. 29, Div. Ent., U. S. Dept Agric., 1898.

Exhibit: Adult and figure.

THE BUFFALO TREE-HOPPER.

Ceresa bubalus Say.

For general account see Marlatt, Cir. 23, Div. Ent., U. S. Dept. Agric., 1897.

Exhibit: Adult, work, and figure.

THE PERIODICAL CICADA.

Tibicen septendecim Linn.

(See special case containing life history, with illustrations of this insect and its work.)

For life history and general article see Marlatt, Bul. 14, n. s., Div. Ent., U. S. Dept Agric., 1898.

EXHIBIT: Pupa, pupa skins, and adult.

THE SAN JOSE SCALE.

Aspidiotus perniciosus Comst.

(Food plants: Almond, apple, apricot, birch, black walnut, black currant, catalpa, chestnut, crab apple, crab grass, cherry, grape, hickory, oak, peach, pear, persimmon, plum, poplar, prune, Rocky Mountain cherry, rose, silver maple, willow, and many other plants. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 271–275, 1903; Howard and Marlatt, Bul. 3, n. s., Div. Ent., U. S. Dept. Agric., 1896. 80 pp.

EXHIBIT: Infested twig.

PUTNAM SCALE; CRANBERRY SCALE.

Aspidiotus ancylus Putn.

(Food plants: Apple, apricot, box elder, cottonwood, cranberry, elm, hemlock, maple, oak, peach, pear, plum, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 252–253, 1903.

EXHIBIT: Infested twig.

THE CHERRY SCALE; FORBES' SCALE.

Aspidiotus forbesi Johns.

(Food plants: Apple, cherry, currant, honey locust, peach, pear, plum, walnut, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 259–260, 1903.

EXHIBIT: Infested twig.

THE GREEDY SCALE.

Aspidiotus rapax Comst.

(Food plants: Cottonwood, maple, olive, pear, quince, apple, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 276–278, 1903.

EXHIBIT: Infested twig.

THE EUROPEAN FRUIT-SCALE.

Aspidiotus ostreæformis Curt.

(Food plants: Apple, cherry, maple, oak, peach, pear, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 268–270, 1903.

EXHIBIT: Infested twig.

THE SCURFY BARK LOUSE.

Chionaspis furfura Fitch.

(Food plants: Apple, cherry, currant, elm, pear, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 217–219, 1903; Howard, Yearbook, U. S. Dept. Agric., 1894, pp. 259–261, figs.; Banks, Bul. 34, Div. Ent., U. S. Dept. Agric., p. 14, 1902.

EXHIBIT: Infested twig.

OYSTER-SHELL BARK-LOUSE.

Lepidosaphes ulmi Linn.

(Attacks principally apple, currant, Cornus, cottonwood, lilac, pear, sassafras, etc. Formerly called *Mytilaspis pomorum* Bouché. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 314–317, 1903.

EXHIBIT: Infested twig.

THE BLACK SCALE.

Saissetia oleæ Bern.

(Food plants: Apple, apricot, olive, orange, pear, plum, rose; formerly a Lecanium. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 205–206, 1903.

EXHIBIT: Infested twig.

INJURING THE LEAVES.

PISTOL CASE-BEARER.

Coleophora malivorella Riley.

(Feeds on leaves and buds.)

For general account see Slingerland, Bul. 124, Cornell Univ. Agr. Expt. Sta., 1897.

EXHIBIT: Cocoon, adult, work, and figure.

EYE-SPOTTED BUD-MOTH.

Tmetocera ocellana Schiff.

(Feeds on buds and young leaves.)

For general account see Slingerland, Bul. 50, Cornell Univ. Agr. Expt. Sta., 1893.

EXHIBIT: Pupa, adult, and work.

APPLE-TREE BUCCULATRIX.

Bucculatrix pomifoliella Clem.

For general account and partial bibliography see Slingerland and Fletcher, Bul. 214, Cornell Univ. Agr. Expt. Sta., pp. 69–78, figs., 1903.

Exhibit: Cocoon, adult, and figure.

THE RESPLENDENT SHIELD-BEARER.

Coptodisca splendoriferella Clem.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 263–265, 1899.

Exhibit: Cocoon, adult, work, and figure.

CHAPIN'S APPLE-LEAF SEWER.

Ancylis nubeculana Clem.

For brief article see Lugger, 4th Rpt. St. Ent. Minn., pp. 239–240, 1899.

Exhibit: Pupa, adult, work, and figure.

THE OBLIQUE-BANDED LEAF-ROLLER.

Archips rosaceana Harr.

(Formerly *Cacoecia.*)

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 226–227, 1899.

Exhibit: Pupa, adult, and work.

THE LESSER APPLE LEAF-FOLDER.

Acleris minuta Rob.

(Formerly *Teras.*)

For general account see J. B. Smith, Farmers' Bul. 178, U. S. Dept. Agric., pp. 12–17, 1903.

Exhibit: Pupa and adult.

THE LEAF CRUMPLER.

Mineola indiginella Zell.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 211–213, 1899.

Exhibit: Cocoon, pupa, adult, and figure.

THE APPLE-LEAF SKELETONIZER.

Canarsia hammondi Riley.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 217–218, 1899.

Exhibit: Pupa, adult, and work.

APPLE-TREE TENT-CATERPILLAR.

Malacosoma americana Fab.

(Formerly *Clisiocampa.*)

For life history and bibliography see Felt, 14th Rpt. St. Ent. N. Y., pp. 177–190, 1898.

Exhibit: Eggs, larva, cocoon, pupa, adult and work, and the parasites; *Pimpla conquisitor* Say, and *Ichneumon lætus* Brullé.

THE LIME-TREE WINTER-MOTH.

Erannis tiliaria Harr.

(Formerly *Hibernia.*)

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 193–195, 1899.

Exhibit: Pupa, adult, and figure.

THE ELM SPAN-WORM.

Ennomos subsignarius Hbn.

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 232–233, 306–307, 1890.

Exhibit: Eggs, larva, pupa, and work.

THE APPLE LEAF-MINER.

Tischeria malifoliella Clem.

For life history and bibliography see Lintner, 11th Rpt. N. Y. St. Ent., pp. 160–162, 1896.

Exhibit: Adult and work.

THE SPRING CANKER-WORM.

Paleacrita vernata Peck.

For general account see Coquillett, Circ. 9, Div. Ent., U. S. Dept. Agric., pp. 1–3, 1895.

Exhibit: Larva, adult, and figure.

THE FALL CANKER-WORM.

Alsophila pometaria Harr.

(Formerly *Anisopteryx.*)

For general account see Coquillett, Circ. 9, Div. Ent., U. S. Dept. Agric., pp. 3–4, 1895.

Exhibit: Eggs, larva, cocoon, adult, and figure.

THE WHITE-MARKED TUSSOCK-MOTH.

Hemerocampa leucostigma S. & A.

(Larvæ feed extensively upon fruit and shade trees and often damage shrubs and vines; see special case containing life history and parasites.)

For general account of this insect and its parasites see Howard, Tech. Ser., 5, Div. Ent., U. S. Dept. Agric., 1897; for life history, etc., Howard, Farmers' Bul. 99, pp. 12–20, 1899.

Exhibit: Egg-masses, larva, and adult.

THE FALL WEB-WORM.

Hyphantria cunea Dru.

For general account see Howard, Farmers' Bul. 99, U. S. Dept. Agric., pp. 20–25, 1899.

Exhibit: Larva, pupa, adult, and work.

THE COMMON BAGWORM.

Thyridopteryx ephemeræformis Steph.

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 258–262, 1890.

Exhibit: Cocoons and figure.

IO MOTH.

Automeris io Fab.

For general account see Lugger, 4th Rpt. State Ent. Minn., pp. 126–129, fig. 130, and pl. 16, fig. 129, 1899.

Exhibit: Adult.

THE BROWN-TAIL MOTH.

Euproctis chrysorrhœa Linn.

For life history and general article see Fernald and Kirkland, Spec. Bul. Hatch. Expt. Sta., Mass., 15 pp., 1 fig., 3 pls., 1898.

Exhibit: Larva, adult and figure.

THE GYPSY MOTH.

Porthetria dispar Linn.

For life history, habits and general account see Forbush and Fernald, "The Gypsy Moth," 495 pp. + i–c, 1896; Howard, Bul. 11, n. s., Div. Ent., U. S. Dept. Agric., 1897.

Exhibit: Larva, adult, and figure.

THE CLIMBING CUTWORM.

Euxoa scandens Riley.

(Formerly *Carneades.*)

For general account see Slingerland, Bul. 104, Cornell Univ. Agr. Expt. Sta., pp. 567–569, Pl. I, 1895.

Exhibit: Adult.

APPLE-TREE APHIS.

Aphis mali Fitch.

For general account see Smith, Bul. 143, N. J. Agr., Expt. Sta., 1900.

For general article treating of several species occurring on apple see Pergande, Bul. 44 Div. Ent., U. S. Dept. Agric., pp. 5–23, 1904.

Exhibit: Work and figure and the following enemies: *Adalia-bipunctata* L., *Anatis 15-punctata* Ol., *Coccinella novemnotata* Hbst., *C. sanguinea* L., *Harmonia picta* Rand., *Hippodamia convergens* Guen., and *H. 13-punctata* L.

THE CECROPIA SILK MOTH.

Samia cecropia Linn.

For general account see Riley, 4th Rpt. Ins. Mo., pp. 103-111, 1872.
EXHIBIT: Larva, cocoon, and adult.

THE IMBRICATED SNOUT-BEETLE.

Epicærus imbricatus Say.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 28–29, 1903, and Bul. 19, n. s., pp. 62–67, 1899.
EXHIBIT: Adult.

SYNETA ALBIDA Lec.

For brief notice see Riley and Howard, Insect Life, v. IV, p. 396, 1892.
EXHIBIT: Adult and work.

RED-LEGGED FLEA-BEETLE.

Crepidodera rufipes Linn.

For general article see Insect Life, v. V, pp. 334–342, 1893.
EXHIBT: Adult.

THE APPLE-LEAF FLEA-WEEVIL.

Orchestes pallicornis Say.

For short account of life history see Forbes, Trans. Ill. St. Hort. Soc., f. 1901, p. 147, 1902.
EXHIBIT: Adult.

INJURING THE FRUIT.

TEN-SPOTTED XANTHONIA.

Xanthonia decemnotata Say.

EXHIBIT: Adult and work.

THE INDIAN EUPHORIA.

Euphoria inda Linn.

For life history and general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 67–74, 1899.
EXHIBIT: Adult and work.

JUNE BEETLE; FIG EATER.

Allorhina nitida Linn.

For general account see Howard, Bul. 10, n. s., Div. Ent., U. S. Dept. Agric., pp. 20-26, 1898.
EXHIBIT: Adult.

CODLING MOTH; APPLE WORM.

Carpocapsa pomonella Linn.

For full bibliography, life history, and illustrations see Simpson, Bul. 41, Div. Ent., U. S. Dept. Agric., 105 pp., 1903, figs.
EXHIBIT: Full life history (larva, pupa, cocoons, and adult) and parasites: *Pimpla annulipes* and *P. conquisitor*. Enemies: *Chauliognathus pennsylvanicus* and *Telephorus bilineatus*.

THE GREEN FRUIT-WORMS.

The three following species of *Xylina* are commonly known as green fruit-worms.

For general account see Slingerland, Bul. 123, Cornell Univ. Agr. Expt. Sta., 1896.

Xylina antennata Walk.

EXHIBIT: Adult and figure.

Xylina grotei Riley.

EXHIBIT: Adult and figure.

Xylina laticinerea Grote.

EXHIBIT: Adult and figure.

ILLUSTRATION SHOWING WORK OF A TORTRICID ON APPLE.

(The larva mines in and feeds beneath the skin of the fruit.)

THE PLUM CURCULIO.

Conotrachelus nenuphar Hbst.

For general account and bibliography see Lintner, 7th Rpt. N. Y. St. Ent., pp. 288–296, 1891.

EXHIBIT: Adult and figure.

THE APPLE CURCULIO.

Anthonomus quadrigibbus Say.

For general account see Gillette, Bul. 11, Iowa Agric. Expt. Sta., pp. 492–494, 1890.

EXHIBIT: Adult and figure.

THE APPLE-FRUIT MAGGOT.

Rhagoletis pomonella Walsh.

(Formerly *Trypeta.*)

For life history see Harvey, Rpt. Maine Agr. Expt. Sta., p. 190, 1889; Banks, Bul. 34, Div. Ent., U. S. Dept. Agric., p. 45, 1902.

Exhibit: Puparium, adult, and figure.

THE PERIODICAL CICADA.

THE PERIODICAL CICADA.

Tibicen septendecim Linn.

(Injures by deposition of eggs in the twigs almost all fruit, shade, and forest trees. Formerly *Cicada.*)

For life history and general article see Marlatt, Bul. 14, n. s., Div. Ent., U. S. Dept. Agric. 1898.

EXHIBIT: Full life history with figures. Enemies: *Megastizus speciosus* Dru. (adult and figure), *Oripoda elongata* (figure), *Pediculoides ventricosus* (figure).

THE WHITE-MARKED TUSSOCK MOTH AND ITS PARASITES.

For general account of this insect and the parasites affecting it see Howard, Tech. series, 5, Div. Ent., U. S. Dept. Agric., 1897. For life history, etc., see Howard, Farmers' Bul. 99, U. S. Dept. Agric., pp. 12–20, 1899.

THE WHITE-MARKED TUSSOCK-MOTH.

Hemerocampa leucostigma S. & A.

(Larvæ feed extensively upon fruit and shade trees and often damage shrubs and vines.)

EXHIBIT: Egg masses, larva, pupa, cocoon, adult, figure, and the following parasites:

Primary Hymenopterous Parasites.

Pimpla conquisitor Say.

EXHIBIT: Adult, cocoon, and figure.

Pimpla annulipes Say.

EXHIBIT: Adult.

Pimpla inquisitor Say.

EXHIBIT: Adult, cocoon, and figure.

Apanteles hyphantriæ Riley.

EXHIBIT: Adult and cocoon.

Meteorus communis Cress.

EXHIBIT: Adult and cocoon.

Limneria valida Cress.

EXHIBIT: Adult and cocoon.

Chalcis ovata Say.

EXHIBIT: Adult.

Secondary Hymenopterous Parasites.

Dibrachys boucheanus Ratz.

(Parasitic on *Pimpla*, *Meteorus*, etc.)

EXHIBIT: Adult and figure.

Chalcis debilis Say.

(Parasite on *Pimpla*, *Meteorus*, etc.)

EXHIBIT: Adult and cocoon.

Tertiary Hymenopterous Parasites.

Asecodes albitarsis Ashm.

(Parasite on *Dibrachys*.)

EXHIBIT: Adult and figure.

Primary Dipterous Parasites.

Tachina mella Walk.

EXHIBIT: Adult.

Frontina aletiæ Riley.

EXHIBIT: Adult.

INSECTS INJURIOUS TO PEACH.

Saunders, Insects Injurious to Fruit, 2d edit., pp. 191–200, 1900.

THE NATIVE PEACH BARK-BEETLE.

Phlœophthorus liminaris Harr.

(Formerly called *Phlœotribus.*)

For general account see Lintner, 9th Rpt. N. Y. St. Ent., pp. 365–368, 1893.

Exhibit: Adult and work.

THE FRUIT-TREE BARK-BEETLE.

Scolytus rugulosus Ratz.

For general account see Chittenden, Circ. 29, Div. Ent., U. S. Dept. Agric., 1898.

Exhibit: Adult, work, figure, and the parasite *Chiropachys colon.*

THE PEACH-TREE BORER.

Sanninoidea exitiosa Say.

(Formerly *Sannina.*)

For general account see Marlatt, Circ. 17, Div. Ent., U. S. Dept. Agric., 1896.

Exhibit: Pupa, cocoon, adult, and figure.

THE PERIODICAL CICADA.

Tibicen septendecim Linn.

(Injures by deposition of eggs in the twigs almost all fruit, shade, and forest trees. See special case containing stages and illustrations.)

For life history and general article see Marlatt, Bul. 14, n. s., Div. Ent., U. S. Dept. Agric., 1898.

Exhibit: Pupa, adult, and enemy *Megastizus speciosus.*

THE BLUE-SPANGLED PEACH-MOTH.

Haploa lecontei Boisd.

(Formerly *Callimorpha.*)

For general account see Saunders, Insects Injurious to Fruit, 2d edit., pp. 197–199, 1900.

Exhibit: Adult.

THE PEACH-TWIG MOTH.

Anarsia lineatella Zell.

For general article with bibliography see Marlatt, Bul. 10, n. s., Div. Ent., U. S. Dept. Agric., pp. 7–20, 1898.

Exhibit: Pupa, adult, work, and figure.

THE INDIAN FRUIT-FLY.

Ceratitis capitata Wied.

For general article see Riley, Rpt. U. S. Dept. Agric., 1890, pp. 255–257.

Exhibit: Pupa, adult, and figure.

THE PEACH SCALE.

Eulecanium persicæ Fabr.

(Food plants: Peach, plum, quince, etc.; formerly a Lecanium. See under "More important scale insects.")

For bibliography, food plants, and distribution see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 191–193, 1903.

EXHIBIT: Infested twig.

PUTNAM SCALE; CRANBERRY SCALE.

Aspidiotus ancylus Putn.

(Food plants: Apple, apricot, box-elder, cottonwood, cranberry, elm, hemlock, maple, oak, peach, pear, plum, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 252–253, 1903.

EXHIBIT: Infested twig.

THE SAN JOSE SCALE.

Aspidiotus perniciosus Comst.

(Food plants: Almond, apple, apricot, birch, black walnut, black currant, catalpa, chestnut, crab-apple, crab-grass, cherry, grape, hickory, oak, peach, pear, persimmon, plum, poplar, prune, Rocky Mountain cherry, rose, silver maple, willow, and many other plants. See under "More important scale insects."

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 271–275, 1903; Howard and Marlatt, Bul. 3, n. s., Div. Ent., U. S. Dept. Agric., 1896, 80 pp.

EXHIBIT: Infested twig.

THE CHERRY LEAF-BEETLE.

Galerucella cavicollis Lec.

For general article and distribution see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 90–93, 1899.

EXHIBIT: Adult.

THE CHERRY-FRUIT MAGGOT.

Rhagoletis cingulata Loew.

For detailed account see Slingerland, Bul. 172, Cornell Univ. Agr. Exp. Sta., 41 pp., 6 figs., 1899; Chittenden, Bul. 44, Div. Ent., U. S. Dept. Agric., p. 70–75, 1904.

EXHIBIT: Adult.

INSECTS INJURIOUS TO PEAR.

(Many of the insects injuring the apple will be found attacking the pear.)

THE FRUIT-TREE BARK-BEETLE.

Scolytus rugulosus Ratz.

For general account see Chittenden, Circ. 29, Div. Ent., U. S. Dept. Agric., 1898.

EXHIBIT: Adult, work, and figure.

PEAR-BLIGHT BEETLE; SHOT-BORER.

Xyleborus pyri Peck.

(Formerly called *X. dispar.*)

For general account see Hubbard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 22–23, 1897.

EXHIBIT: Adult, work, and figure.

THE PEAR BLISTER MITE.

Eriophyes pyri Pagenst.

For detailed account see Slingerland, Bul. 61, Cornell Univ. Agr. Exp. Sta., pp. 317–328, figs., 1893.

EXHIBIT: Work and figure.

THE PEAR PSYLLA.

Psylla pyri Linn.

For general accounts see Slingerland, Bul. 44, Cornell Univ. Agr. Sta., 1892; Marlatt, Circ. 7, Div. Ent., U. S. Dept. Agric., 1895.

EXHIBIT: Adult and figure.

THE PEAR SLUG.

Eriocampoides limacina Ratz.

(Formerly *Eriocampa cerasi.*)

For general account see Marlatt, Circ. 28, Div. Ent., U. S. Dept. Agric., 1897.

EXHIBIT: Adult, work, and figure.

THE SCURFY BARK-LOUSE.

Chionaspis furfura Fitch.

(Food-plants: Apple, cherry, currant, elm, pear, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 217-219, 1903; Howard, Yearbook, U. S. Dept. Agric., 1894, pp. 259–261, figs.; Banks, Bul. 34, Div., Ent., U. S. Dept. Agric., p. 14, 1902.

EXHIBIT: Infested twig.

SINUATE PEAR-BORER.

Agrilus sinuatus Oliv.

For general accounts see Smith, Rpt. Entom. N. J. Agr. Exp. Sta. f. 1894, pp. 556–561, 1895; Banks, Bul. 34, Div. Ent., U. S. Dept. Agric., pp. 40–41, 1902.

EXHIBIT: Adult and figure.

INSECTS INJURIOUS TO PLUM.

THE PLUM CURCULIO.

Conotrachelus nenuphar Hbst.

For general account and bibliography see Lintner, 7th Rpt. N. Y. St. Ent., pp. 288–296, 1891.

EXHIBIT: Adult, figure, and enemies, *Aspidoglossa subangulata*, *Chauliognathus pennsylvanicus*, *Harpalus caliginosus*, and parasite *Sigalphus curculionis*.

THE PLUM GOUGER.

Anthonomus prunicida Walsh.

(Formerly *Coccotones*.)

For general accounts see Riley and Howard, Insect Life, v. II, pp. 258–259, 1890; Gillette, Bul. 47, Colo. Agr. Exp. Sta., pp. 20–22, 1898.

EXHIBIT: Adult, work, and figure.

THE HOP PLANT-LOUSE.

Phorodon humuli Schr.

(Attacks hop and plum.)

For full life history see Riley, Circ. 2, Div. Ent., U. S. Dept. Agric., 1891.

EXHIBIT: Adult and work.

FORBES' SCALE; CHERRY SCALE.

Aspidiotus forbesi Johns.

(See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 259–260, 1903.

EXHIBIT: Infested twig.

INSECTS LIABLE TO BE DISTRIBUTED ON NURSERY STOCK.

See Banks, Bul. 34, Div. Ent., U. S. Dept. Agric., 46 pp., 1902.

THE PEACH SCALE.

Eulecanium persicæ Fab.

(Food plants: Peach, plum, quince, etc.; formerly a *Lecanium*. See under "More important scale insects.")

For bibliography, food plants, and distribution see Fernald, Cat. Coccidæ of World, Bul. 38, Mass. Agr. Coll., pp. 191–193, 1903.

EXHIBIT: Infested twig.

OYSTER-SHELL BARK-LOUSE.

Lepidosaphes ulmi Linn.

(Attacks principally apple, currant, Cornus, cottonwood, lilac, pear, sassafras, etc.; formerly called *Mytilaspis pomorum* Bouché. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 314–317, 1903.

Exhibit: Infested twig.

THE SCURFY BARK-LOUSE.

Chionaspis furfura Fitch.

(Food plants: Apple, cherry, currant, elm, pear, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 217–219, 1903; Howard, Yearbook, U. S. Dept. Agric., 1894, pp. 259–261, fig.

Exhibit: Infested twig.

THE SAN JOSE SCALE.

Aspidiotus perniciosus Comst.

(Food-plants: Almond, apple, apricot, birch, black walnut, black currant, catalpa, chestnut, crab-apple, crab-grass, cherry, grape, hickory, oak, peach, pear, persimmon, plum, poplar, prune, Rocky Mountain cherry, rose, silver maple, willow, and many other plants. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 271–275, 1903; Howard and Marlatt, Bul. 3, n. s., Div. Ent., U. S. Dept. Agric., 1896. 80 pp.

Exhibit: Infested twig.

PUTNAM SCALE; CRANBERRY SCALE.

Aspidiotus ancylus Putn.

(Food-plants: Apple, apricot, box-elder, cottonwood, cranberry, elm, hemlock, maple, oak, peach, pear, plum, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 252–253, 1903.

Exhibit: Infested twig.

THE CHERRY SCALE; FORBES' SCALE.

Aspidiotus forbesi Johns.

(Food-plants: Apple, cherry, currant, honey locust, peach, pear, plum, walnut, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 259–260, 1903.

Exhibit: Infested twig.

25528—No. 47—04——3

THE WALNUT SCALE.

Aspidiotus juglans-regiæ Comst.

(Food-plants: Ash, cherry, crab-apple, currant, English walnut, locust, peach, pear, prune, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 265, 1903.

EXHIBIT: Infested twig.

THE GREEDY SCALE.

Aspidiotus rapax Comst.

(Food-plants: Cottonwood, maple, olive, pear, quince, apple, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 276–278, 1903.

EXHIBIT: Infested twig.

THE EUROPEAN FRUIT SCALE.

Aspidiotus ostreæformis Curt.

(Food-plants: Apple, cherry, maple, oak, peach, pear, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 268–270, 1903.

EXHIBIT: Infested twig.

THE WEST INDIAN PEACH SCALE.

Diaspis pentagona Targ.

(See under "More important scale insects.")

For bibliography and partial list of food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 234–235, 1903; Riley and Howard, Insect Life, v. VI, pp. 287–295, figs., 1894.

EXHIBIT: Infested twig.

THE ROSE SCALE.

Aulacaspis rosæ Bouché.

(Food-plants: Blackberry, mango, myrtle, pear, raspberry, rose, Cycas, Ailanthus, etc. See under "More important scale insects.")

For bibliography see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 236, 1903.

EXHIBIT: Infested twig.

THE WOOLLY APPLE APHIS.

Schizoneura lanigera Hausm.

For general account see Marlatt, Cir. 20, Div. Ent., U. S. Dept. Agric., 1897.

EXHIBIT: Infested roots, twigs, and figure.

THE BLACK PEACH APHIS.

Aphis persicæ-niger Sm.

Original description E. F. Smith, Ent. Amer., pp. 101–103, 1890.

For general account see Slingerland, Bul. 49, Cornell Univ. Agr. Expt. Sta., pp. 427–433, figs. 1892.

EXHIBIT: Figure.

APPLE-TREE APHIS.

Aphis mali Fitch.

For general account separating species occurring on apple see Pergande, Bul. 44, Div. Ent., U. S. Dept. Agric., pp. 5–23, 1904.

For general account see Smith, Bul. 14, N. J. Agr. Expt. Sta., 1900.

EXHIBIT: Figure.

THE BUFFALO TREE-HOPPER.

Ceresa bubalus Say.

For general account see Marlatt, Circ. 23, Div. Ent., U. S. Dept. Agric., 1897.

EXHIBIT: Adult and figure.

APPLE-TREE TENT-CATERPILLAR.

Malacosoma americana Fab.

(Formerly *Clisiocampa.*)

For life history and bibliography see Felt, 14th Rpt. N. Y. St. Ent., pp. 177–190, 1898.

EXHIBIT: Adult and figure.

THE FALL WEB-WORM.

Hyphantria cunea Dru.

For general account see Howard, Farmers' Bul. 99, U. S. Dept. Agric., pp. 20–25, 1899.

EXHIBIT: Adult.

THE BROWN-TAIL MOTH.

Euproctis chrysorrhœa Linn.

For life history and general article see Fernald and Kirkland, Spec. Bul. Hatch Expt. Sta., Mass., pp. 15, 1 fig., 3 pls., 1898.

EXHIBIT: Larva and adult.

THE WHITE-MARKED TUSSOCK-MOTH.

Hemerocampa leucostigma S. & A.

(Larvæ feed extensively upon fruit and shade trees, and often damage shrubs and vines; see special case containing life history and parasites.)

For general account of this insect and its parasites see Howard, Bul. Tech. ser., 5, Div. Ent., U. S. Dept. Agric., 1897; for life history, Howard, Farmers' Bul. 99, pp. 12–20, 1899.

EXHIBIT: Larva and adult.

THE LEAF CRUMPLER.

Mineola indiginella Zell.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 211–213, 1899.

Exhibit: Larva and adult.

THE GYPSY MOTH.

Porthetria dispar Linn.

For life history, habits, and general account see Forbush and Fernald, The Gypsy Moth, pp. 495+i–c, 1896.

Exhibit: Larva, adult, and figure.

THE SPRING CANKER-WORM.

Paleacrita vernata Peck.

For general account see Coquillett, Circ. 9, Div. Ent., U. S. Dept. Agric., pp. 1–3, 1895.

Exhibit: Adult and figure.

THE FALL CANKER-WORM.

Alsophila pometaria Harr.

(Formerly *Anisopteryx*.)

For general account see Coquillett, Circ. 9, Div. Ent., U. S. Dept. Agric., pp. 3–4, 1895.

Exhibit: Eggs, adult, and figure.

THE PEACH-TREE BORER.

Sanninoidea exitiosa Say.

(Formerly *Sannina*.)

For general account see Marlatt, Circ. 17, Div. Ent., U. S. Dept. Agric., 1896.

Exhibit: Adult and figure.

THE PEACH-TWIG MOTH.

Anarsia lineatella Zell.

For general article with bibliography see Marlatt, Bul. 10, n. s., Div. Ent., U. S. Dept. Agric., pp. 7–20, 1898.

Exhibit: Adult.

EYE-SPOTTED BUD-MOTH.

Tmetocera ocellana Schiff.

(Feeds on buds and young leaves.)

For general account see Slingerland, Bul. 50, Cornell Univ. Agric. Expt. Sta., 1893.

Exhibit: Adult and figure.

THE COMMON BAGWORM.

Thyridopteryx ephemeræformis Steph.

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 258–262, 1890.

Exhibit: Adult, cocoon, and figure.

THE APPLE-TWIG BORER.

Amphicerus bicaudatus Say.

For general account see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 11–13, figure, 1898.

EXHIBIT: Adult and figure.

ROUND-HEADED APPLE-TREE BORER.

Saperda candida Fab.

For general account see Chittenden, Circ. 32, Div. Ent., U. S. Dept. Agric., pp. 1–8, 1898.

EXHIBIT: Adult and figure.

FLAT-HEADED APPLE-TREE BORER.

Chrysobothris femorata Fab.

For general account see Chittenden, Circ. 32, Div. Ent., U. S. Dept. Agric., pp. 9–12, 1898.

EXHIBIT: Adult and figure.

FRUIT-TREE BARK BEETLE; SHOT-HOLE BORER.

Scolytus rugulosus Ratz.

For general account see Chittenden, Circ. 29, Div. Ent., U. S. Dept. Agric., 1898.

EXHIBIT: Adult and figure.

THE PEAR PSYLLA.

Psylla pyri Linn.

For general accounts see Slingerland, Bul. 44, Cornell Univ. Agr. Expt. Sta., 1892; Marlatt, Circ. 7, Div. Ent., U. S. Dept. Agric., 1895.

EXHIBIT: Figure.

THE PEAR BLISTER MITE.

Eriophyes pyri Pagenst.

For detailed account see Slingerland, Bul. 61, Cornell Univ. Agr. Expt. Sta., pp. 317–328, figures, 1893.

EXHIBIT: Work and figure.

INSECTS INJURIOUS TO GRAPE.

For the more important grape insects see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., 1898; Saunders, Insects Injurious to Fruit, 2d edition, pp. 227–302, 1900; Bruner, Nebr. State Hortic. Soc. Rept. f. 1895, pp. 69–162, 1896.

INJURING THE ROOTS.

THE TILE-HORNED PRIONUS.

Prionus imbricornis Linn.

For general account of *Prionus* species see Lugger, 5th Rpt. St. Ent. Minn., pp. 110–111, 1899.

EXHIBIT: Adult.

THE GRAPEVINE ROOT-BORER.

Memythrus polistiformis Harr.

(Formerly *Sciapteron.*)

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 55–57, 1899.

Exhibit: Figures.

INJURING LEAVES AND ROOTS.

GRAPE PHYLLOXERA.

Phylloxera vastatrix Planch.

For general article see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 4–9, figs., 1898.

Exhibit: Work and figure.

INJURING THE STEMS AND BRANCHES.

COTTONY MAPLE SCALE.

Pulvinaria innumerablis Rathv.

(Foot-plants: Alder, apple, box-elder, elm, grape, linden, maples, pear, willow, etc. See under "More Important Scale Insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 134–135, 1903; Howard, Bul. 22, n. s., Div. Ent., U. S. Dept. Agric., pp. 8–16, figs. 4, 1900.

Exhibit: Infested twig.

THE GRAPE SCALE.

Aspidiotus uvæ Comst.

(Food-plants: Ampelopsis, grape, hickory.)

For bibliography see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 280, 1903.

Exhibit: Infested twig.

THE APPLE TWIG-BORER.

Amphicerus bicaudatus Say.

For general account see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 11–13, figure, 1898.

Exhibit: Adult and figure.

RED-SHOULDERED TWIG-BORER.

Sinoxylon basilare Say.

For general account see Lugger, 5th Rpt. St. Ent. Minn., pp. 70–72, 1899.

Exhibit: Adult and figure.

THE SNOWY TREE-CRICKET.

Œcanthus niveus DeG.

For general account see Lugger, 3d Rpt. St. Ent. Minn., pp. 269–271, 1898.

Exhibit: Adult and figure.

ŒCANTHUS LATIPENNIS Riley.

For brief article see Lugger, 3d Rpt. St. Ent. Minn., p. 273, 1898.
EXHIBIT: Adult.

GRAPE-VINE ROOT-WORM.

Fidia viticida Walsh.

For life history and bibliography see Felt, Bul. 72, N. Y. St. Museum, 1903, 55 pp., with colored plate.
EXHIBIT: Adult and figure.

GRAPE-VINE FIDIA.

Fidia longipes Mels.

EXHIBIT: Adult.

INJURING THE LEAVES.

ACHEMON SPHINX.

Pholus achemon Dru.

(Formerly *Philampelus.*)
For general account see Lugger, 4th Rpt. State Ent. Minn., pp. 38–40, 1899.
EXHIBIT: Larva and adult.

GRAPE-VINE HOG-CATERPILLAR.

Ampelophaga myron Cram.

For general account see Lugger, 4th Rpt. State Ent. Minn., pp. 42–45, 1899.
EXHIBIT: Larva and adult.

ABBOT'S SPHINX.

Sphecodina abbotii Swaine.

(Formerly *Thyreus.*)
For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 32–33, 1899.
EXHIBIT: Larva and adult.

LARGE BEAUTIFUL WOOD NYMPH.

Euthisanotia grata Fabr.

(Formerly *Eudryas.*)
For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 69–71, 1899.
EXHIBIT: Larva and adult.

SMALL BEAUTIFUL WOOD NYMPH.

Euthisanotia unio Hübn.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 71–72, 1899.
EXHIBIT: Larva and adult.

EIGHT-SPOTTED FORESTER.

Alypia octomaculata Fab.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 66–67, 1899.

Exhibit: Larva and adult.

SOCIAL GRAPE CATERPILLAR.

Harrisina americana Guer.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 72–74, 1899.

Exhibit: Adult and figure.

GRAPE LEAF-FOLDER.

Desmia funeralis Hübn.

For general account see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 16–17, 1898.

Exhibit: Larva, adult, and work.

GRAPE-VINE PLUME-MOTH.

Oxyptilus periscelidactylus Fitch.

For general article see Lugger, 4th Rpt. St. Ent. Minn., pp. 221–222, 1899; for bibliography and article see Lintner, 12th Rpt. St. Ent. N. Y., pp. 218–222, 1897.

Exhibit: Larva and adult.

GRAPE-VINE SAWFLY.

Blennocampa pygmaea Say.

For general articles see Harris, Insects Injurious to Vegetation, pp. 522–525; Beach, Lowe and Stewart, Bul. 170, N. Y. Agric. Expt. Sta., p. 417, 1899.

Exhibit: Adult and figure.

GRAPE-VINE FLEA-BEETLE.

Haltica chalybea Illig.

For general articles see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 13–14, 1898; Slingerland, Bul. 157, Cornell Univ. Agr. Expt. Sta. N. Y., 1898. For additional food plants see Lugger, 5th Rpt. St. Ent. Minn., pp. 157–159, 1899.

Exhibit: Adult and figure.

THE GRAPE-VINE COLASPIS.

Colaspis brunnea Fab.

For general article see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 13–14, 1903.

Exhibit: Adult.

THE VARIED ANOMALA.

Anomala varians Burm.

Exhibit: Adult.

THE GRAPE-VINE LEAF-HOPPER.

Typhlocyba comes Say.

For general article see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 18–20, 1898, under *Typhlocyba vitifex*. For full life history and general account see Slingerland, Bul. 215, Cornell Univ. Agr. Expt. Sta., 1904.

EXHIBIT: Adult and figure.

THE WAVED SHARP-SHOOTER.

Oncometopia undata Fab.

(Formerly *Proconia*.)

For general article see Lugger, 6th Rpt. St. Ent. Minn., pp. 136–137, 1900.

EXHIBIT: Adult.

INJURING THE FRUIT.

THE GRAPE-SEED WORM.

Isosoma vitis Saunders.

For general account see Saunders, Insects Injurious to Fruits, 2d ed., pp. 296–297, 1900.

EXHIBIT: Adult.

THE GRAPE FRUIT-MOTH.

Polychrosis botrana Schiff.

(Formerly *Eudemis*.)

For general article see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 20–22, 1898.

EXHIBIT: Adult and figure.

THE GRAPE SEED-WEEVIL.

Craponius inæqualis Say.

For general accounts see Saunders, Insects Injurious to Fruits, 2d ed., pp. 300–301, 1900; Lintner, 9th Rpt. N. Y. St. Ent., pp. 364–365, 1893.

EXHIBIT: Adult and figure.

INSECTS INJURIOUS TO COTTON.

For general articles on cotton insects see Howard, The Cotton Plant, Bul. 33, Office Expt. Sta., U. S. Dept. Agric., pp. 317–350, 1896; Farmers' Bul. 47, U. S. Dept. Agric., 1897; Ashmead, Insect Life, v. VII, pp. 25–29, 240–247, 1894, and pp. 320–326, 1895.

NOTABLY INJURIOUS.

COTTON BOLLWORM; CORN-EAR WORM.

Heliothis obscura Fab.

(Formerly called *H. armiger*. Larvæ feed on bolls of cotton, ears of corn, tobacco buds, beans, and in tomatoes; also cut off young plants of various garden crops.)

For full life history and general account see Quaintance, Farmers' Bul. 191, U. S. Dept. Agric., 1904.

Exhibit: Larva, pupa, adult, work in cotton bolls, and illustrations of different stages, and work on various plants. Parasite exhibited: *Archytas piliventris;* adult, pupa, and figure. Enemies exhibited: *Calosoma lugubre*, *C. Sayi*, *C. scrutator* Fab., *Polistes annularis*, and *P. rubiginosus* Lep.

MEXICAN COTTON BOLL WEEVIL.

Anthonomus grandis Boh.

(Breeds in and destroys bolls.)

For full life history and general account see Hunter and Hinds, Bul. 45, Div. Ent., U. S. Dept. Agric., 1904; also Hunter, Farmers' Bul. 189, 1904.

Exhibit: Life history (larvæ, pupæ, adults, injured cotton bolls, with stages present in bolls, and uninjured bolls); illustrations and map showing distribution in United States.

THE COTTON WORM.

Alabama argillacea Hübn.

(Formerly called *Aletia xylina.* Larvæ feed on the leaves.)

For life history and general account see Howard, The Cotton Plant, Bull. 33, Office Expt. Stations, U. S. Dept. Agric., pp. 320–328, 1896.

Exhibit: Larva, pupa, cocoon, adult, and figure.

RED BUG; COTTON-STAINER.

Dysdercus suturellus H.-Schf.

(Punctures boll and seeds, aborting them and staining fibers an indelible red or yellow color.)

Exhibit: Nymph, adult, work, and figure.

GLASSY-WINGED SHARPSHOOTER.

Homalodisca coagulata Say.

(Punctures stalk, leaves, and flowers; oviposits in forms and squares; very abundant.

Exhibit: Nymph, adult, and figure.

COTTON APHIS.

Aphis gossypii Glover.

(Punctures leaves and young bolls; late in season causes falling of young bolls.)

See Chittenden, Bull. 43, Div. Ent., U. S. Dept. Agric., pp. 58–61, 1903.

Exhibit: Adult, work, and figure.

LEAF-CUTTING ANT.

Atta fervens Say.

(Cleans up plants, cotton worms, and pupæ.)

Exhibit: Adult.

THE AMERICAN LOCUST.

Schistocerca americana Dru.

For life history and general account see Howard, Insect Life, v. VII, pp. 220–229, 1894; Morgan, Bull. 30, n. s., Div. Ent., U. S. Dept. Agric., p. 27, 1901.

EXHIBIT: Nymph and adult.

THECLA PŒAS Hubn.

(Larvæ feed on or bore into bolls, and also feed on leaves.)

For brief account see Mally, Bul. 29, Div. Ent., Dept. Agric., pp. 29–30, 1893.

EXHIBIT: Adult and work.

COTTON SNOUT-MOTH.

Platynota sentana Clem.

(Attacks forms and squares; afterwards feeds on leaves.)

EXHIBIT: Adult.

RASPBERRY SNOUT-MOTH.

Platynota rostrana Walk.

(Larvæ bore into young bolls.)

EXHIBIT: Adult.

COTTON-BOLL CUTWORM.

Prodenia ornithogalli Guen.

(Works as the boll-worm; feeds on bolls and squares.)

For life history, general account, and distribution see Chittenden, Bul. 27, n. s., Div. Ent. U. S. Dept. Agric., pp. 64–71, 1901.

EXHIBIT: Adult.

SHAGREENED CUTWORM.

Feltia malefida Guen.

(Larvæ destroy young plants.)

EXHIBIT: Adult.

OCCASIONALLY INJURIOUS.

THICK-THIGHED WALKING-STICK.

Diapheromera femorata Linn.

For general account of life history see Howard, The Insect Book, pp. 323–325; fig. 214; pl. 32, fig. 13, 1901.

EXHIBIT: Adult.

LEAF-PALPUS CRICKET.

Phyllopalpus pulchellus Uhl.

(Feeds on petals, corolla, and pollen.)

EXHIBIT: Adult.

AGITATING CRICKET.

Hapithus agitator Uhl.

EXHIBIT: Adult.

BANDED CRICKET.

Nemobius fasciatus DeG.

EXHIBIT: Adult.

TETTIGIDEA LATERALIS Say.

EXHIBIT: Adult.

CONE-HEADED LOCUST.

Conocephalus obtusus Burm.

(Feeds on leaves, eating large pieces out of side and gnawing holes through the middle.)

EXHIBIT: Adult.

OBSCURE GRASSHOPPER.

Acridium obscurum Burm.

(Feeds upon leaves, and sometimes almost defoliates branches.)

For brief notices see Ashmead, Insect Life, v. VII, p. 26, 1894; Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., pp. 27–28, 1901.

EXHIBIT: Adult.

THREE-SPOTTED SOLDIER-BUG.

Euschistus tristigmus Say.

(Common in cotton; punctures terminal shoots.)

EXHIBIT: Adult.

CHARIESTERUS ANTENNATOR Fab.

(Feeds on juices of cotton plants.)

EXHIBIT: Adult.

SOUTHERN LEAF-FOOTED PLANT-BUG.

Leptoglossus phyllopus Linn.

(Punctures buds and young bolls.)

For life history and general account see Chittenden, Bul. 19, n. s., Div. Ent. U. S. Dept. Agric., pp. 46–48, 1899.

EXHIBIT: Adult.

METAPODIUS FEMORATUS Fab.

(Attacks cotton worms and also punctures young bolls.)

EXHIBIT: Adult.

CALOCORIS RAPIDUS Say.

(Punctures buds and young bolls; causes bolls to "flare" and drop.)

EXHIBIT: Adult.

AULACIZES IRRORATA Fab.

(Common; feeding on stalk, etc.)

EXHIBIT: Adult.

SIX-SPOTTED TREE-HOPPER.

Cicadula sexnotata Fall.

(Feeds on cotton stalks, etc.)

EXHIBIT: Adult.

SCOLOPS SULCIPES Say.

(Punctures stems.)

EXHIBIT: Adult.

ENTILIA SINUATA Fab.

(Punctures terminal shoots.)

For general account see Howard, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., pp. 75–78, 1901.

EXHIBIT: Adult.

THE PHYLLIRA TIGER-MOTH.

Apantesis phyllira Dru.

(Sometimes locally almost as injurious as the cotton worm.)

EXHIBIT: Adult.

GREAT LEOPARD MOTH.

Ecpantheria deflorata Fab.

(Formerly *E. scribonia* Stäl.)

EXHIBIT: Adult.

ABBOT'S BAGWORM.

Oiketicus abbottii Grote.

EXHIBIT: Adult.

SALT-MARSH CATERPILLAR.

Estigmene acræa Dru.

(Formerly *Leucarctia.*)

For short account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 43–44, fig. 41, 1903.

EXHIBIT: Adult.

YELLOW-BEAR CATERPILLAR.

Diacrisia virginica Fab.

For general account see Lugger, 4th Rept. State Ent. Minn., pp. 79–81, fig. 78, 1899.

EXHIBIT: Adult.

IO MOTH.

Automeris io Fab.

For general account see Lugger, 4th Rept. State Ent. Minn., pp. 126–129, fig. 130, and pl. 16, fig. 129, 1899.

EXHIBIT: Adult.

MARGINED LEAF-CHAFER.

Anomala marginata Fab.

For bibliography and general account see Lintner, 10th Rpt. State Ent. N. Y., pp. 411–413, 1895.

EXHIBIT: Adult.

MELANCHOLY SAPCHAFER

Euphoria melancholica Gory.

(Frequents flowers for nectar and sap; exceptionally eats into bolls.)

EXHIBIT: Adult.

THE LIVID WIREWORM.

Monocrepidius lividus DeG.

(Feeds on leaves, blossoms, and squares.)

EXHIBIT: Adult.

LEMA SEX-PUNCTATA Ol.

(Adult feeds on leaves.)

For notice of occurrence on cotton see Ashmead, Insect Life, v. VII, p. 247, 1894.

EXHIBIT: Adult.

THE SOUTHERN CORN LEAF-BEETLE.

Myochrous denticollis Say.

For general account see Webster, Bull. 26, n. s., Div. Ent., U. S. Dept. Agric., p. 87, 1900.

EXHIBIT: Adult.

CRYPTOCEPHALUS CALIDUS Suff.

For notice of occurrence on cotton see Ashmead, Insect Life, v. VII, p. 247, 1894.

EXHIBIT: Adult.

TYPOPHORUS VIRIDICYANEUS Crotch.

(Beetle feeds on young leaves.)

EXHIBIT: Adult.

NODONOTA TRISTIS Ol.

(Gnaws bolls, causing them to drop.)

For list of food-plants see Chittenden, Bull. 7, n. s., Div. Ent., U. S. Dept. Agric., p. 61, 1897; for general article see Lugger, 5th Rept. State Ent. Minn., p. 146, 1899.

EXHIBIT: Adult.

ELONGATE FLEA-BEETLE.

Systena elongata Fab.

(On bolls.)

For notice of occurrence on cotton see Ashmead, Insect Life, v. VII, p. 247, 1894.

EXHIBIT: Adult.

THE EGG-PLANT FLEA-BEETLE.

Epitrix fuscula Cr.

For general account see Chittenden, Bull. 19, n. s., Div. Ent., U .S. Dept. Agric., pp. 87–89, 1899.

EXHIBIT: Adult.

BENEFICIAL INSECTS COLLECTED ON COTTON.

For general list of beneficial insects taken on cotton see Ashmead, Insect Life, v. VII, 1895.

CHRYSOPA ATTENUATA Walk.

EXHIBIT: Adult.

PERITHEMIS DOMITIA Dru.

EXHIBIT: Adult.

CAROLINA REAR HORSE.

Stagmomantis carolina Burm.

EXHIBIT: Egg mass and adult.

SINEA DIADEMA Fab.

(Attacks cotton worms and is destructive to other small caterpillars and aphides.)

EXHIBIT: Adult.

WHEEL-BUG.

Arilus cristatus Linn.

(Observed to prey on the cotton worm. Formerly called *Prionidus.*)

EXHIBIT: Adult.

ZELUS BILOBUS Say.

(Attacks cotton worm.)

EXHIBIT: Nymph and adult.

APIOMERUS CRASSIPES Fab.

(Observed to attack cotton worms.)

EXHIBIT: Adult.

PHYMATA FASCIATA Gray.

(Attacks cotton worms: also Diptera.)

EXHIBIT: Adult.

SIX-SPOTTED TIGER BEETLE.

Cicindela sex-guttata Fab.

EXHIBIT: Adult.

CAROLINA TIGER BEETLE.

Tetracha carolina Linn.

(Feeds occasionally upon cotton worms.)

EXHIBIT: Adult.

SUBTERRANEAN GROUND BEETLE.

Scarites subterraneus Fab.

EXHIBIT: Adult.

PTEROSTICHUS PERMUNDUS Say.

EXHIBIT: Adult.

HELLUOMORPHA TEXANA Lec.

EXHIBIT: Adult.

GALERITA ATRIPES Lec.

EXHIBIT: Adult.

CALLIDA DECORA Fab.

EXHIBIT: Adult.

COCCINELLA SANGUINEA Linn.

(Attacks cotton aphis.)
EXHIBIT: Adult.

COCCINELLA OCULATA Fab.

EXHIBIT: Adult.

TWICE-STABBED LADYBIRD.

Chilocorus bivulnerus Muls.

(Attacks cotton Aleyrodes.)
EXHIBIT: Adult.

COLLOPS QUADRIMACULATUS Fab.

(Feeds on pollen, and probably on small insects.)
EXHIBIT: Adult.

ROBBER FLY.

Erax lateralis Macq.

(Observed to catch bollworm moths on the wing.)
EXHIBIT: Adult.

ASILUS SERICEUS Say.

(Observed to catch moths on the wing.)
EXHIBIT: Adult.

MESOGRAPTA POLITA Say.

(Feeds on aphids.)
EXHIBIT: Adult.

COTTON-WORM TACHINA FLY.

Frontina aletiæ Riley.

EXHIBIT: Adult.

HOLCOCEPHALA ABDOMINALIS Say.

EXHIBIT: Adult.

DIOGMITES DISCOLOR Loew.

EXHIBIT: Adult.

LAPHRIA THORACICA Fab.

EXHIBIT: Adult.

ATOMOSIA PUELLA Wied.

EXHIBIT: Adult.

ROBBER FLY.

Proctacanthus milberti Macq.

(Observed to attack cotton worm.)
EXHIBIT: Adult.

ISODONTIA PHILADELPHICA Lep.

(Preys upon crickets.)
EXHIBIT: Adult.

AMMOPHILA PICTIPENNIS Walsh.

(Preys on caterpillars.)

EXHIBIT: Adult.

POLISTES RUBIGINOSUS Lep.

EXHIBIT: Adult.

COMPSOMERUS QUADRINOTATA Fab.

EXHIBIT: Adult.

LYSIPHLEBUS TESTACEIPES Cress.

(Cotton aphis parasite: "Fairly cleaned cotton of aphids.")

EXHIBIT: Adult.

OPHION BILINEATUS Say.

EXHIBIT: Adult.

SPILOCRYPTUS NUNCIUS Say.

(Bred from cotton worm.)

EXHIBIT: Adult.

SYNTOMOSPHYRUM ESURUS Riley.

(Bred from cotton worm.)

EXHIBIT: Adult.

EUPLECTRUS COMSTOCKII How.

(Bred from cotton worm and boll worm.)

EXHIBIT: Adult.

INSECTS INJURIOUS TO INDIAN CORN.

Treating of injuries to seed in ground and roots see Forbes, 18th Rept. St. Ent. Ill., pp. 7–171, Pls. I–XV, 1894.

For general articles see Webster, 35th Ann. Rept. Ind. St. Bd. Agric. f. 1885, pp. 180–215, 1886; Bruner, Rpt. Nebr. St. Bd. Agr. f. 1891, pp. 240–309, 1892.

INJURING THE PLANTED SEED.

THE SEED-CORN MAGGOT.

Pegomya fusciceps Zett.

(Formerly *Pegomyia zeæ* Riley.)

For general articles see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 84–92, 1902; Forbes 18th Rpt. St. Ent. Ill., pp. 16–19, 1894.

EXHIBIT: Pupa, adult, and work.

SEED-CORN AGONODERUS.

Agonoderus pallipes Fab.

For general account see Forbes, 18th Rept. St. Ent. Ill., pp. 12–14, 1894.

EXHIBIT: Adult and work.

LITTLE BLACK ANT.

Prenolepis imparis Say.

(Adults eat sprouting corn; also called *P. nitens* Mayr., which is a European variety of the species.)

EXHIBIT: Adult.

THE SMALL YELLOW ANT.

Solenopsis debilis Mayr.

For general article see Forbes, 18th Rept. St. Ent. Ill., pp. 9–11, 66, 1894.

EXHIBIT: Adult and figure.

THE VAGABOND CRAMBUS.

Crambus vulgivagellus Clem.

For general account see Lintner, 1st Rept. St. Ent. N. Y., pp. 127–157, 1882; Felt. Bul. 64, Cornell Univ. Agr. Expt. Sta., pp. 69–71, 1894.

EXHIBIT: Adult and figure.

THE CORN-ROOT WEBWORM.

Crambus zeellus Fern.

(Larvæ feed on roots; when full grown form a webbed cocoon near base of stalk.)

For general account see Forbes, 14th Rpt. St. Ent. Ill., pp. 12–17, 1885.

EXHIBIT: Pupa, cocoon, and adult.

INJURING THE ROOTS AND SEEDS.

THE CORN-ROOT APHIS.

Aphis maidis-radicis Forbes.

For detailed account see Forbes, 18th Rpt. St. Ent. Ill., pp. 58–85, 1894.

EXHIBIT: Adult and figure.

WHITE GRUB; MAY BEETLE.

Lachnosterna fusca Fröh.

For account of white grubs injuring corn see Forbes, 18th Rept. St. Ent. Ill., pp. 109–145, 1894.

EXHIBIT: Adult.

LACHNOSTERNA GIBBOSA Burm.

For general account of white grubs see Forbes, 18th Rept. St. Ent. Ill., pp. 109–145, 1894.

EXHIBIT: Adult.

THE WHEAT WIREWORM.

Agriotes mancus Say.

For general account see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 77–78, 1901.

EXHIBIT: Adult and figure.

THE CORN WIREWORM.

Melanotus cribulosus Lec.

For injuries by wire-worms see Forbes, 18th Rept. St. Ent. Ill., pp. 27–51, 1894.

Exhibit: Adult and figure.

THE COMMON WIREWORM.

Melanotus communis Gyll.

For injuries by wire-worms see Forbes, 18th Rept. St. Ent. Ill., pp. 27–51, 1894.

Exhibit: Adult.

TWELVE-SPOTTED CUCUMBER-BEETLE.

Diabrotica duodecempunctata Oliv.

For general articles see Forbes, 18th Rept. St. Ent. Ill., pp. 146–154, 1894; Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 12–13, 1903; Quaintance, Bul. 26, n. s., Div. Ent., U. S. Dept. Agric., pp. 35–40, 1900.

Exhibit: Adult and figure. (See also, under "Injuring the Ears.")

THE NORTHERN CORN ROOT-WORM.

Diabrotica longicornis Say.

For general account see Forbes, 18th Rept. St. Ent. Ill., pp. 154–165, 1894.

Exhibit: Adult and figure.

INJURING THE YOUNG PLANT.

CORN BILL-BUGS.

For general articles on corn bill-bugs see Forbes, 16th Rept. St. Ent. Ill., pp. 58–74, 1890; Bul. 79, Ill. Agr. Expt. Sta., 27 pp. 1902.

THE CLAY-COLORED BILL-BUG.

Sphenophorus æqualis Linn.

(Treated as *S. ochreus* Lec, by Forbes, l. c.)

Exhibit: Adult and figure.

NORTHERN CORN BILL-BUG.

Sphenophorus zeæ Walsh.

(Generally called by authors *S. sculptilis.*)

Exhibit: Adult and work.

THE TENACIOUS BILL-BUG.

Sphenophorus pertinax Oliv.

Exhibit: Adult.

THE BLUE-GRASS BILL-BUG.

Sphenophorus parvulus Gyll.

Exhibit: Adult.

THE CALLOUSED BILL-BUG.

Sphenophorus callosus Oliv.

Exhibit: Adult.

THE FALL ARMY WORM.

Laphygma frugiperda S. & A.

(Larvæ feed on leaves, burrow in young plants, and later leaves and forming ears are damaged.)

For full life history and bibliography see Chittenden, Bul. 29, n. s., Div. Ent. U. S. Dept. Agric. pp. 13–45, 1901.

Exhibit: Larva and adult.

THE ARGE TIGER MOTH.

Apantesis arge Dru.

For brief account see Bruner, Rept. Nebr. St. Bd. Agr. 1891, p. 244, 1892.

Exhibit: Larva, pupa, and adult.

YELLOW-BEAR CATERPILLAR.

Diacrisia virginica Fab.

For general account see Lugger, 4th Rept. State Entom. Minn., pp. 79–81, fig. 78, 1899.

Exhibit: Larva, cocoon, and adult.

SALT-MARSH CATERPILLAR.

Estigmene acræa Dru.

For short account see Chittenden, Bul. 43, Div. Ent. U. S. Dept. Agric., pp. 43–44, fig. 41, 1903.

Exhibit: Larva and adult.

THE SADDLE-BACK CATERPILLAR.

Sibine stimulea Clem.

For general account see Lugger, 4th Rept. State Ent. Minn., pp. 98–99, 1899.

Exhibit: Larva, pupa, cocoon, and adult.

THE DARK-SIDED CUTWORM.

Euxoa messoria Harr.

For general account see Riley, Rept. U. S. Dept. Agric., 1884, pp. 290–291, 1885.

Exhibit: Larva, adult, and figure.

THE BRONZED CUTWORM.

Nephelodes minians Guen.

For life history and partial bibliography see Lintner, 1st Rept. St. Ent. N. Y., pp. 99–110, 1882; Riley, Rept. U. S. Dept. Agric., 1890, pp. 244–246, 1891.

Exhibit: Adult.

THE W-MARKED CUTWORM.

Noctua clandestina Harr.

For general account see Slingerland, Bul. 104, Cornell Univ. Agr. Expt. Sta., pp. 571–574, 1895.

EXHIBIT: Larva and adult.

THE SPOTTED CUTWORM.

Noctua c-nigrum Linn.

For general account and life history see Chittenden, Bul. 27, n. s., Div. Ent. U. S. Dept. Agric., pp. 54–58, 1901.

EXHIBIT: Larva, pupa, adult, and figure.

THE VARIEGATED CUTWORM.

Peridroma saucia Hübn.

For general bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent. U. S. Dept. Agric., pp. 46–64, 1901.

EXHIBIT: Adult and figure.

THE GLASSY CUTWORM.

Hadena devastatrix Brace.

For general account see Riley, Rept. U. S. Dept. Agric. 1884, pp. 296–297, 1885.

EXHIBIT: Adult.

THE BLACK CUTWORM.

Agrotis ypsilon Rott.

For general account see Riley, Rept. U. S. Dept. Agric. 1884, pp. 294–295, 1895.

EXHIBIT: Larva, adult and figure.

WESTERN STRIPED CUTWORM.

Feltia herilis Grote.

For short account see Riley, 1st Rpt. St. Ent. Mo., pp. 81–82, 1869; Forbes: 16th Rpt. St. Ent. Ill., p. 89, 1894.

EXHIBIT: Larva and adult.

THE DINGY CUTWORM.

Feltia subgothica Haw.

For general articles see Chittenden, Yearbook, U. S. Dept. Agric., 1898, p. 257. Slingerland, Bul. 104, Cornell Univ. Agr. Expt. Sta., pp. 574–579, 1895.

EXHIBIT: Larva, adult and figure.

INJURING THE STALK.

THE SPINDLE WORM.

Achatodes zeæ Harr.

For brief accounts see Harris, Ins. Inj. to Veg., Flint Ed., pp. 438–439, 1862; Webster, 35th Ann. Rept. Ind. St. Bd. Agric., f. 1885, p. 193, 1886.

EXHIBIT: Adult and work.

SMALLER CORN STALK-BORER.

Elasmopalpus lignosellus Zell.

For life-history and general account see Chittenden, Bul. 23, n. s., Div. Ent. U. S. Dept. Agric. pp. 17–22, 1900.

Exhibit: Adult work and cocoon.

THE STALK BORER.

Papaipema nitela Guen.

(Formerly *Gortyna* and *Hydræcia*.)

For general account see Bird, Can. Ent., v. XXX, pp. 127–128, 1898; Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 11–12, fig. 2, 1902.

Exhibit: Adult.

CORN STALK-BORER; SUGAR-CANE BORER.

Diatræa saccharalis Fab.

For full life-history and general account see Howard, Insect life, v. IV, pp. 95–103, 1891.

Exhibit: Eggs, larva, pupa, adult, and work.

INJURING THE LEAVES.

THE LESSER LOCUST.

Melanoplus atlanis Riley.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 178–183, pl. 12, fig. 7, 1897; Riley, Bul. 25, Div. Ent. U. S. Dept. Agric. pp. 26–27, 1891.

Exhibit: Adult.

THE TWO-STRIPED LOCUST.

Melanoplus bivittatus Say.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 363–368, pp. 24, fig. 5, 1897; Riley, l. c., pp. 31–32.

Exhibit: Adult.

THE DIFFERENTIAL LOCUST.

Melanoplus differentialis Thos.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 349–354, pl. 23, figs. 3 and 4, 1897; also Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., pp. 7–26, 1901.

Exhibit: Adult.

RED-LEGGED LOCUST.

Melanoplus femur-rubrum DeG.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 278–285, pl. 1, fig. h., pl. 19, figs. 1–4, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 27–28, 1891.

Exhibit: Adult.

THE ROCKY-MOUNTAIN LOCUST.

Melanoplus spretus Thos.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 184–190, pl. 12, fig. 8, 1897; also Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 7–26, 1891.

EXHIBIT: Adult.

THE AMERICAN LOCUST.

Schistocerca americana Dru.

For life history and general account, Howard, Insect Life, v. VII, pp. 220–229, 1894; also Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., p. 27, 1901.

EXHIBIT: Adult.

THE CORN APHIS.

Aphis maidis Fitch.

For general account see Forbes, 13th Rept. St. Ent. Ill., pp. 43–50, 1884.

EXHIBIT: Figure.

THE BARRED-WINGED ONION MAGGOT.

Chætopsis ænea Wied.

For general accounts see Howard, Insect Life, v. VII, pp. 352–354, 1895; Pettit, Bul. 200, Mich. Agr. Exp. Sta., pp. 206–208, 1902.

EXHIBIT: Puparium and adult.

THE CHINCH BUG.

Blissus leucopterus Say.

(Injures cane, corn, oats, rye, wheat, etc.)

For bibliography, 1786–1888, see Forbes, App. to 16th Rept. St. Ent. Ill., pp. 1–102, 1894.

For general articles see Forbes, 16th Rept. St. Ent. Ill., pp. 1–57, 1894; Webster, Bul. 15, n. s., Div. Ent., U. S. Dept. Agric., 82 pp. 1898.

EXHIBIT: Nymph, adult, and figure.

THE FODDER WORM.

Epizeuxis æmula Hübn.

(Lives especially on leaves of stored fodder.)

For general account see Packard, 5th Rept. U. S. Ent., Comm., pp. 843–844, 1890.

EXHIBIT: Larva, pupa, cocoon, adult, and work.

THE ARMY WORM.

Heliophila unipuncta Harv.

(Formerly *Leucania*.)

For bibliography and life history see Lintner, 12th Rept. St. Ent. N. Y., pp. 190–214, 1896.

EXHIBIT: Larva and adult.

THE CORN-FEEDING SYRPHUS-FLY.

Mesograpta polita Say.

For general account see Riley and Howard, Insect Life, v. I, pp. 5–8, 1888.

EXHIBIT: Puparia and adult.

THE STRIPED BLISTER BEETLE.

Epicauta vittata Fab.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 22–23, 1903.

EXHIBIT: Pupa, adult, and figure.

BLACK BLISTER BEETLE.

Epicauta pennsylvanica DeG.

(Feed on pollen and flower leaves.)

For brief account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 25, 1903.

EXHIBIT: Adult.

THE MARGINED BLISTER BEETLE.

Epicauta cinerea Forst.

For brief account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 24, 1903.

EXHIBIT: Adult.

INJURING THE POLLEN, SILK, AND EARS.

BOLLWORM; CORN-EAR WORM.

Heliothis obscura Fab.

(Formerly *H. armiger* Hübn; see special case.)

For life history and general account see Quaintance, Farmer's Bul. 191, U. S. Dept. Agric., 1904.

EXHIBIT: Adult.

THE BROWN FRUIT-CHAFER.

Euphoria inda Linn.

For life history and general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 67–74, 1899.

EXHIBIT: Adult and work.

THE ROSE-CHAFER.

Macrodactylus subspinosus Fabr.

For general article and life history see Smith, Bul. 82, N. J. Agric. Expt. Sta., 1891.

EXHIBIT: Adult and figure.

THE RUSTY-BROWN TORTRIX.

Platynota flavedana Clem.

(Larvæ feed in ears of green corn.)

For general account see Lugger, 4th Rept. St. Ent. Minn., pp. 231–239, 1899.

EXHIBIT: Pupa and adult.

INSECTS INJURING SUGAR CANE.

THE SUGAR-CANE PIN-BORER.

Xyleborus sacchari Hopk.

For notes, under name of *X. pubescens* Zim., see Riley and Howard, Insect Life, v. IV, p. 402, and v. V, p. 51, 1892.

EXHIBIT: Adult, work, and figure.

HAWAIIAN SUGAR-CANE BORER.

Sphenophorus obscurus Boisd.

For life history and general account see Riley and Howard, Insect Life, v. I, pp. 185–189, 1888.

EXHIBIT: Adult and figure.

THE SUGAR-CANE BEETLE.

Ligyrus rugiceps Lec.

For general account see Howard, Insect Life, v. I, pp. 11–13, 1888.

EXHIBIT: Adult and work.

CORN STALK-BORER; SUGAR-CANE BORER.

Diatræa saccharalis Fab.

For full life history and general account see Howard, Insect Life, v. VI, pp. 95–103, 1891.

EXHIBIT: Larva, pupa, adult, and work.

INSECTS INJURIOUS TO RICE.

THE RICE WEEVIL.

Calandra oryza Linn.

For general account see Chittenden, Farmers' Bul. 45, rev. ed., U. S. Dept. Agric., pp. 5–6, 1897.

EXHIBIT: Adult and figure.

THE RICE GRUB.

Chalepus trachypygus Burm.

For general article see Riley, Rpt. U. S. Dept. Agric., 1881 pp. 128–129, 1882.

EXHIBIT: Adult and figure.

THE RICE STALK-BORER.

Chilo plejadellus Zinck.

For general article under *Chilo oryzæellus* see Riley, Rpt. U. S. Dept. Agric. f. 1881, pp. 133–135, 1882.

EXHIBIT: Larva, adult, work, figure and the parasite *Phora aletiæ* Comst.

THE RICE WATER-WEEVIL.

Lissorhoptrus simplex Say.

For general article see Riley, Rpt. U. S. Dept. Agric. f. 1881, pp. 130–133, 1882.

EXHIBIT: Adult and figure.

THE FALL ARMY WORM.

Laphygma frugiperda S. & A.

For full life history and bibliography see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 13–45, 1901.

EXHIBIT: Larva, pupa, adult, and figure.

INSECTS INJURIOUS TO GRASSES.

APANTESIS NAIS Dru.

(Formerly *Arctia.*)

For account see Beutenmüller, "Cat. Lep. N. Y.," Ann. Acad. N. Y., p. 206, 1890.

EXHIBIT: Adult.

GRANULATED CUTWORM.

Feltia annexa Fr.

For general account see Riley, Rept. U. S. Dept. Agric., 1884, pp. 291–292, 1885. For description and stages see French, Can. Ent., v. XIV, pp. 207–210, 1882.

EXHIBIT: Adult and figure.

HOMOPTERA EDUSA Dru.

EXHIBIT: Larva, pupa, and adult.

NORTHERN GRASS WORM.

Drasteria erechtea Cram.

For general account see Slingerland, Insect Life, v. V, pp. 87–88, 1892.

EXHIBIT: Larva, pupa, adult, and work.

THE ARMY WORM.

Heliophila unipuncta Harv.

(Formerly *Leucania*).

For bibliography and life history see Lintner, 12th Rept. St. Ent. N. Y., pp. 190–214, 1896.

EXHIBIT: Larva, pupa, adult, and figure.

THE SALT-MARSH CATERPILLAR.

Estigmene acræa Dru.

(Formerly called *Leucarctia.*)

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 43–44, 1903.

EXHIBIT: Larva and adult.

FALL ARMY WORM.

Laphygma frugiperda S. & A.

For full bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 40–45, 1901.

Exhibit: Larva, pupa, adult, and figure.

THE ISABELLA TIGER MOTH.

Isia isabella S. & A.

(Formerly *Pyrrharctia.*)

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 44–45, 1903.

Exhibit: Larva, cocoon, adult and figure.

THE VAGABOND CRAMBUS.

Crambus vulgivagellus Clem.

For general accounts see Lintner, 1st Rept. St. Ent. N. Y., pp. 127–151, 1882; Felt, Bul. 64, Cornell Univ. Agric. Expt. Sta., pp. 69–71, 1894.

Exhibit: Eggs, adult, work, figure, and parasite *Lampronotus frigida* Cr.

THE SPOTTED CUTWORM.

Noctua c-nigrum Linn.

For general account and life history see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 54–58, 1901.

Exhibit: Pupa and adult.

WHITE GRUB; MAY BEETLE.

Lachnosterna fusca Fröh.

For account of white grubs see Forbes, 18th Rept. St. Ent. Ill., pp. 109–145, 1894.

Exhibit: Adult.

WHITE GRUB; JUNE BEETLE.

Lachnosterna arcuata Smith.

For general account see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 74–76, 1901.

Exhibit: Adult and figure.

THE DISTENDED MAY BEETLE.

Lachnosterna farcta Lec.

For short notices see Comstock, Rept. U. S. Dept. Agric. 1879, pp. 247–248, Pl. V, fig. 5, 1880, and Howard, Bul. 22, n. s., Div. Ent., U. S. Dept. Agric., p. 107, 1900.

Exhibit: Adult.

THE BLUE-GRASS BILL-BUG.

Sphenophorus parvulus Gyll.

For article see Forbes, 16th Rept. St. Ent. Ill., pp. 63, 65, 1894.

Exhibit: Adult.

THE LESSER LOCUST.

Melanoplus atlanis Riley.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 178–183, pl. 12, fig. 7, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 26–27, 1891.

EXHIBIT: Adult.

THE CAROLINA LOCUST.

Dissosteira carolina Linn.

For short account see Forbes and Hart, Bul. 60, Ill. Agric. Expt. Sta., pp. 479–480, 1900.

EXHIBIT: Nymph and adult.

THE TIMOTHY PLANT-BUG.

Oncognathus binotatus Fabr.

For general account see Howard, Insect Life, v. V, pp. 90–92, 1892.

EXHIBIT: Adult.

THE GREATER WHEAT-STEM MAGGOT.

Meromyza americana Fitch.

For general article see Webster, Bul. 42, Div. Ent., U. S. Dept. Agric., pp. 43–51, 1903.

EXHIBIT: Adult and figure.

LEATHER JACKET; MEADOW WORM.

Tipula bicornis Loew.

For general account see Forbes, 16th Rept. St. Ent. Ill., pp. 78–83, 1890.

EXHIBIT: Adult and figure.

INSECTS INJURIOUS TO ALFALFA.

THE VARIEGATED CUTWORM.

Peridroma saucia Hübn.

For general bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent. U. S. Dept. Agric., pp. 46–64, 1901.

EXHIBIT: Larva and adult.

THE FALL ARMY WORM.

Laphygma frugiperda S. & A.

For full bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent. U. S. Dept. Agric., pp. 40–45, 1901.

EXHIBIT: Larva and adult.

THE ALFALFA WEBWORM.

Loxostege commixtalis Walk.

(Formerly known as *L. cereralis* Zell.)

For account of *Loxostege* sp. attacking alfalfa see Insect Life, v. VI, pp. 36, 1893.

EXHIBIT: Adult.

THE TWO-STRIPED LOCUST.

Melanoplus bivittatus Say.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 363–368, pl. 24, fig. 5, 1897.

Exhibit: Adult and figure.

THE DIFFERENTIAL LOCUST.

Melanoplus differentialis Thos.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 349–354, pl. 23, figs. 3 and 4, 1897; also Morgan, Bul. 30, n. s., Div. Ent. U. S. Dept. Agric., pp. 7–26, 1901.

Exhibit: Adult and figure.

THE ROCKY-MOUNTAIN LOCUST.

Melanoplus spretus Thos.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 184–190, pl. 12, fig. 8, 1897.

Exhibit: Adult.

THE AMERICAN LOCUST.

Schistocera americana Dru.

For life history and general account see Howard, Insect Life, v. VII, pp. 220–229, 1897; also Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., p. 27, 1901.

Exhibit: Adult.

THE CLOVER-SEED CHALCIS-FLY.

Bruchophagus funebris How.

For general account see Hopkins, Bul. 6, n. s., Div. Ent. U. S. Dept. Agric., p. 73, 1896, and Bul. 17, n. s., p. 45, 1898; Titus, Bul. 44, pp. 77–80, 1904.

Exhibit: Adult and work.

INSECTS INJURIOUS TO SMALL GRAINS.

For general articles see Howard, Tech. Ser. 2, Div. Ent. U. S. Dept. Agric., 24 pp., 1896; Marlatt, Farmers' Bul. 132, U. S. Dept. Agric., 38 pp., 1901; Webster, Bul. 42, Div. Ent., U. S. Dept. Agric., 62 pp., 1903.

THE LESSER LOCUST.

Melanoplus atlanis Riley.

For bibliography and general account see Scudder, Proc, U. S. N. M., v. XX, pp. 178–183, pl. 12, fig. 7, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 26–27, 1891.

Exhibit: Nymph and adult.

THE RED-LEGGED LOCUST.

Melanoplus femur-rubrum DeG.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 278–285, pl. 1, fig. h; Pl. IX, figs. 1–4, 1897; Riley, Bul. 25, Div. Ent. U. S. Dept. Agric., pp. 27–28, 1891.

EXHIBIT: Nymph and adult.

THE ROCKY MOUNTAIN LOCUST.

Melanoplus spretus Thos.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 184–190, pl. 12, fig. 8, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 9–26, 1891.

EXHIBIT: Nymph, adult, and figure.

THE WESTERN CRICKET.

Anabrus purpurascens Uhl.

For detailed account see Packard, 2d Rept. U. S. Ent. Comm., pp. 163–178, 1879.

EXHIBIT: Adult.

THE CLEAR-WINGED LOCUST.

Camnula atrox Scudd.

For account of an allied species (*C. pellucida*) see Simpson, Circ. 53, Div. Ent., U. S. Dept. Agric., 1903.

EXHIBIT: Adult.

THE ARMY WORM.

Heliophila unipuncta Harv.

(Formerly *Leucania*.)

For bibliography and life history see Lintner, 12th Rept. St. Ent. N. Y., pp. 190–214, 1896.

EXHIBIT: Larva, pupa, adult, and figure.

FALL ARMY WORM.

Laphygma frugiperda S. & A.

For full bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 40–45, 1901.

EXHIBIT: Larva, pupa, and adult.

STALK BORER.

Papaipema nitela Guen.

(Bores in stems of various plants.)

For general account see Bird, Can. Ent., v. XXX, pp. 127–128, 1898.

EXHIBIT: Larva, pupa, adult, and work.

WHEAT-HEAD ARMY-WORM.

Heliophila albilinea Hübn.

For general account see Riley, 9th Rept. St. Ent. Mo., pp. 50–57, 18.

EXHIBIT: Pupa, adult, figure, and parasites: *Anomalon apicale* Cress., *Tachina anonyma* Riley.

NUTTALL'S BLISTER BEETLE.

Cantharis nuttalli Say.

For short article see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 27, 1903.

EXHIBIT: Adult.

THE CLAY-COLORED BILL-BUG.

Sphenophorus æqualis Lec.

(Treated as *S. ochreus* Lec. by authors.)

For articles on bill-bugs see Forbes, 16th Rept. St. Ent. Ill., pp. 58–74, 1890; Webster, Insect Life, v. II, pp. 132–134, 1889.

EXHIBIT: Adult.

THE GERMAN GRAIN-LOUSE.

Macrosiphum cerealis Kalt.

(Attacks barley, chess, meadow, orchard, and velvet grass, oats, rye, and wheat, feeding on ears, racemes, and other parts of plant.)

For general account see Pergande, Bul. 44, Div. Ent., U. S. Dept. Agric., pp. 18–21, 1904.

EXHIBIT: Figure.

THE ENGLISH GRAIN-LOUSE.

Macrosiphum granaria Buck.

(Attacks green foxtail, meadow, and orchard grass, oats, red-clover, red top, rye, wheat, and wild rye.)

For general account see Pergande, Bul. 44, Div. Ent., U. S. Dept. Agric., pp. 13–18, 1904.

EXHIBIT: Figure and work; parasite, *Lysiphlebus testaceipes* Cress. (figure); and enemies, *Anatis 15-punctata* Ol.; *Coccinella sanguinea* Linn.; *Hippodamia parenthesis* Say; *Podabrus tomentosus* Say; *Sphærophoria cylindrica* Say; *Syrphus americanus* Wied.

THE EUROPEAN GRAIN-LOUSE.

Siphocoryne avenæ Fabr.

(Attacks apple, burdock, celery, choke-cherry, dogwood, grasses, oats, rye, wheat, and other plants.)

For general account see Pergande, Bul. 44, Div. Ent., U. S. Dept. Agric., pp. 5–13, 1904.

EXHIBIT: Figure.

THE CHINCH BUG.

Blissus leucopterus Say.

(Injures cane, corn, oats rye, wheat, etc.)

For bibliography 1785–1888 see Forbes, App. to 16th Rept. St. Ent. Ill., pp. 1–102, 1894. For general articles see Forbes, 16th Rept. St. Ent. Ill., pp. 1–57, 1894; Webster, Bul. 15, n. s., Div. U. S. Dept. Agric., 82 pp., 1898.

EXHIBIT: Eggs, nymph, adult, and figure.

THE GRAIN LEAF-HOPPER.

Diedrocephalus flaviceps Riley.

For account of *D. mollipes* see Osborn & Ball, Bul. 34, Iowa Agric. Expt. Sta., p. 614, 1897.

Exhibit: Adult.

THE DESTRUCTIVE LEAF-HOPPER.

Cicadula exitiosa Uhl.

For general account see Comstock, Rept. U. S. Comm. Agric., 1879, pp. 191–193, 1880.

Exhibit: Adult.

THE WHEAT FALSE WORM.

Dolerus arvensis Say.

For general account see Riley and Marlatt, Insect Life, v. IV, pp. 171–172, 1891.

Exhibit: Adult and figure.

THE GRASS SAWFLY.

Pachynematus extensicornis Nort.

(Formerly *Nematus marylandicus.*)

For article under *N. marylandicus* see Riley and Marlatt, Insect Life, v. IV, pp. 174–177, 1891.

Exhibit: Adult and figure.

THE WESTERN GRAIN SAWFLY.

Cephus occidentalis Marl.

For short article see Riley and Howard, Insect Life, v. II, p. 286, 1890.

Exhibit: Adult, work and figure.

JOINT-WORMS.

For special articles to four following species see Howard, Tech. Ser. 2, Div. Ent., U. S. Dept. Agric., 24 pp., 1896; also Webster, Bul. 42, Div. Ent., U. S. Dept. Agric., 62 pp., 1903.

GREATER WHEAT-STRAW WORM.

Isosoma grande Riley.

Exhibit: Adult and figure.

BARLEY-STRAW WORM.

Isosoma hordei Harr.

Exhibit: Adult, work and figure.

THE WHEAT JOINT-WORM.

Isosoma tritici Riley.

Exhibit: Adult, work and figure.

THE HAIRY-FACED JOINT-WORM.

Isosoma hirtifrons How.

Exhibit: Adult and figure.

THE HESSIAN FLY.

Cecidomyia destructor Say.

(Should be known as *Mayetiola.*)

For general article with bibliography see Osborn, Bul. 16, n. s. Div. Ent., U. S. Dept. Agric., 57 pp., 1898; Marlatt, Farmers' Bul. 132, U. S. Dept. Agric.. pp. 13–22, 1901.

EXHIBIT: Puparia, adult, work, figures, and map.

THE GREATER WHEAT-STEM MAGGOT.

Meromyza americana Fitch.

For general article see Webster, Bul 42, Div. Ent., U. S. Dept. Agric., pp. 43–51, 1903.

EXHIBIT: Adult, work and figure.

THE AMERICAN FRIT-FLY.

Oscinis soror Macq.

For general article see Webster, Bul. 42, Div. Ent., U. S. Dept. Agric., pp. 57–62, 1903.

EXHIBIT: Adult, work, and figure.

THE LESSER WHEAT-STRAW MAGGOT.

Oscinis carbonaria Loew.

For general article see Webster, Bul. 42, Div. Ent., U. S. Dept. Agric., pp. 51–56, 1903.

EXHIBIT: Adult.

CHLOROPS PROXIMA Say.

For short account see Comstock, Rept. U. S. Comm. Agric., 1879, pp. 257–258, 1880.

EXHIBIT: Adult and work.

INSECTS INJURIOUS TO HOPS.

THE HOP PLANT-LOUSE.

Phorodon humuli Schr.

(Attacks hop and plum.)

For full life history see Riley, Circ. 2, Div. Ent., U. S. Dept. Agric., 1891.

EXHIBIT: Adult, work, and figures, with two enemies: *Chrysopa* sp. and *Adalia bipunctata* Linn.

THE COMMA BUTTERFLY.

Polygonia comma Harr.

(Formerly *Grapta.*)

For general account see Howard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 50–51, 1897.

EXHIBIT: Larva and adult.

25528—No. 47—04——5

THE SEMICOLON BUTTERFLY.

Polygonia interrogationis Fab.

For general account see Howard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 47–49, 1897.

EXHIBIT: Larva and adult.

THE HOP GRUB.

Gortyna immanis Guen.

For general account and life history see Howard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 40–44, 1897.

EXHIBIT: Pupa, adult, and work.

THE HOP SNOUT-MOUTH.

Hypena humuli Harr.

For general account see Howard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 44–47, 1897.

EXHIBIT: Larva, pupa and adult.

THE VARIEGATED CUTWORM.

Peridroma saucia Hübn.

For general bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 46–64, 1901.

EXHIBIT: Larva and adult.

INSECTS INJURIOUS TO CLOVER.

For list of clover insects, and short articles on several important species see Bruner and Hunter, Rpt. St. Bd. Agr. Nebr., pp. 240–285, 1898.

INJURING THE ROOTS.

THE CLOVER ROOT-BORER.

Hylastinus trifolii Müll.

(Formerly *Hylastes.*)

For general articles see Riley, Rpt. U. S. Dept. Agr., f. 1878, pp. 248–250, 1879.

EXHIBIT: Adult, work, figure, and enemy, *Telephorus bilineatus* Say.

INJURING THE STEM.

THE CLOVER STEM-BORER.

Languria mozardi Latr.

For general account see Weed, Bul. Ohio Agr. Expt. Sta., 2d series, v. III, No. 8, p. 235, 1890.

EXHIBIT: Adult.

INJURING THE LEAVES.

THE CLOVER MITE.

Bryobia pratensis Garm.

For general article see Garman, 14th Rpt. St. Ent. Ill., p. 73, 1885; Bruner, Rpt. Nebr. St. Bd. Agric., f., 1898, pp. 280–284, 1899; Marlatt, Circ. 19, Div. Ent., U. S. Dept. Agric., 1897.

EXHIBIT: Figure.

CLOVER ALEYRODES.

Aleyrodes sp.

EXHIBIT: Adult and work.

THE WHEAT THRIPS.

Thrips tritici Fitch.

For citations to literature see Lintner, 11th Rpt. N. Y. St. Ent., pp. 247–250, 1896.

EXHIBIT: Figure.

THE CLOVER-LEAF WEEVIL.

Phytonomus punctatus Fabr.

For general account see Lintner, 1st. Rpt. St. Ent. N. Y., pp. 247–253, 1883; Sanderson, Insects injurious to staple crops, pp. 177–179, 1902.

EXHIBIT: Larva, cocoon, adult, work, figure, and enemy, *Collops 4-maculatus* Fab.

THE GRAPE-VINE COLASPIS.

Colaspis brunnea Fab.

For general article see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 13–14, 1903.

EXHIBIT: Adult.

THE 12-SPOTTED CUCUMBER BEETLE.

Diabrotica duodecimpunctata Oliv.

For general account and remedies see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 12–13, 1903; Quaintance, Bul. 26, n. s., Div. Ent., U. S. Dept. Agric., pp. 35–40, 1900.

EXHIBIT: Adult, figure, and parasite, *Celatoria diabroticæ.*

WESTERN CORN ROOT-WORM.

Diabrotica longicornis Say.

For general account see Forbes, 12th Rpt. St. Ent. Ill., pp. 10–31, figs. 1–5, 1883.

EXHIBIT: Adult.

THE IMBRICATED SNOUT-BEETLE.

Epicærus imbricatus Say.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 28–29, 1903; Bul. 19, n. s., pp. 62–67, 1899.

EXHIBIT: Adult.

THE GIBBOUS JUNE-BEETLE.

Lachnosterna gibbosa Burm.

For general account of white grubs see Forbes, 18th Rpt. St. Ent. Ill., pp. 109–144, 1894.

EXHIBIT: Adult.

THE FLAVESCENT CLOVER-WEEVIL.

Sitones flavescens Marsh.

For brief account see Osborn and Gossard, Bul. 14, Ia. Agric. Expt. Sta., pp. 177–178, 1891.

EXHIBIT: Adult.

GRAPHORHINUS VADOSUS Say.

For brief account see Webster, Amer. Nat., v. XVI, p. 746, 1882.

EXHIBIT: Adult.

THE ASH-GRAY BLISTER-BEETLE.

Macrobasis unicolor Kby.

For general account see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 249–250.

EXHIBIT: Adult.

FOUR-LINED PLANT-BUG.

Pœcilocapsus lineatus Fab.

For general accounts see Lintner, 1st. Rpt. St. Ent. N. Y., pp. 271–281, 1883; Slingerland, Bul. 58, Cornell Univ. Agr. Expt. Sta., pp. 207–239, 1893.

EXHIBIT: Adult.

THE TARNISHED PLANT-BUG.

Lygus pratensis Linn.

For general account see Riley, Rpt. U. S. Dept. Agric., f. 1884, pp. 312–315, 1885.

EXHIBIT: Adult.

THE CLOVER-LEAF MIDGE.

Cecidomyia trifolii Loew.

For brief articles see Bruner, Rpt. St. Bd. Agric. Nebr., 1898, pp. 250–251, 1899; Comstock, Rpt. U. S. Dept. Agric., 1879, pp. 197–199, 1880.

EXHIBIT: Cocoon, adult, and work.

THE RED-BANDED LEAF-ROLLER.

Eulia triferana Walk.

(Formerly *Lophoderus.*)

For brief accounts see Lugger, 4th Rpt. State Ent. Minn., p. 231, 1899; Forbes, 14th Rpt. St. Ent. Ill., pp. 20–21, 1885.

EXHIBIT: Pupa and adult.

THE RUSTY-BROWN TORTRIX.

Platynota flavedana Clem.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 231–232, 1899.

EXHIBIT: Eggs, pupa, and adult.

THE SULPHUR-COLORED TORTRIX.

Epagoge sulfureana Clem.

(Formerly *Tortrix* and *Dichelia.*)

For brief account see Lugger, 4th Rpt. S. Ent. Minn., pp. 232–233, 1899. For bibliography see Forbes, 14th Rpt. St. Ent. Ill., pp. 17–20, 1885.

EXHIBIT: Pupa, adult, and work.

CŒLOSTATHMA DISCOPUNCTANA Clem.

(Formerly *Amphisa.*)

For brief notice see Comstock, Rpt. U. S. Dept. Agric., f. 1880, p. 258, 1881.

EXHIBIT: Pupa and adult.

THE FALL ARMY WORM.

Laphygma frugiperda S. & A.

For full life history and bibliography see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 13–45, 1901.

EXHIBIT: Adult.

ANAPHORA POPEANELLA Clem.

For general account see Riley and Howard, Insect Life, v. III, pp. 27–28, 1890.

EXHIBIT: Adult.

THE OBLIQUE-BANDED LEAF-ROLLER.

Archips rosaceana Harr.

(Formerly *Cacœcia.*)

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 226–227, 1899.

EXHIBIT: Pupa and adult.

THE GARDEN WEB-WORM.

Loxostege similalis Guen.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 39–40, 1903.

EXHIBIT: Adult and work.

ARISTOTELIA ROSEOSUFFUSELLA Clem.

(Formerly *Gelechia.*)

For brief reference to food plant see Murtfeldt, Bul. 23, Div. Ent., U. S. Dept. Agric., p. 54, 1891.

EXHIBIT: Pupa and adult.

ECTROPIS CRESPUSCULARIA D. and S.

(Has been placed in genera *Cymatophora*, *Cleora*, and *Boarmia*.)

For brief accounts see Packard, 5th Rpt. U. S. Ent. Comm., p. 371, 1890; Lugger, 4th Rpt. St. Ent. Minn., p. 188, 1899.

EXHIBIT: Adult.

DRASTERIA ERECHTEA Cram.

For general account see Slingerland, Insect Life, vol. V, pp. 87–88, 1892.

EXHIBIT: Larva, cocoon, pupa, and adult.

THE CHICKWEED GEOMETER.

Hæmatopsis grataria Fabr.

For brief notice see Forbes, 14th Rpt. St. Ent. Ill., p. 74, 1885.

EXHIBIT: Adult.

IO MOTH.

Automeris io Fab.

For general account see Lugger, 4th Rpt. State Ent. Minn., pp. 126–129, fig. 130, and pl. 16, fig. 129, 1899.

EXHIBIT: Larva, cocoon, and adult.

CATOPYRRHA DISSIMILARIA Hübn.

(Formerly *Aspilates*.)

EXHIBIT: Adult.

THE GREEN CLOVER WORM.

Plathypena scabra Fab.

(Formerly called *Hypena*.)

For accounts see Comstock, Rpt. U. S. Dept. Agric., 1879, p. 252, 1880; Chittenden, Bull. 30, n. s., Div. Ent., U. S. Dept. Agric., p. 44–50, 1901.

EXHIBIT: Larva, pupa, and adult.

THE SMALL WHITE BRISTLY CUTWORM.

Mamestra renigera Steph.

For short account see Forbes, 16th Rpt. St. Ent. Ill., pp. 95–96, 1890.

EXHIBIT: Larva, pupa, and adult.

THE CLOVER CUTWORM.

Mamestra trifolii Rott.

For account see Riley, Rpt. U. S. Dept. Agric. f. 1883, pp. 123–124, 1883.

EXHIBIT: Larva and adult.

ARMY WORM.

Heliophila unipuncta Harv.

(Formerly *Leucania*.)

For bibliography and life history see Lintner, 12th Rpt. N. Y. St. Ent., pp. 190–214, 1896.

EXHIBIT: Larva, pupa, and adult.

THE VARIEGATED CUTWORM.

Peridroma saucia Hübn.

For general bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 46–64, 1902.

Exhibit: Larva, adult, and figure.

THE COMMELINA OWLET MOTH.

Prodenia commelinæ S. & A.

For life history and general account see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 59–64, Pl. IV, fig. 1, 1901.

Exhibit: Larva, pupa, and adult.

THE DARK-SIDED CUTWORM.

Euxoa messoria Harr.

(Formerly *Carneades.*)

For general account see Riley, Rept. U. S. Dept. Agric. f. 1884, pp. 290–291, 1885.

Exhibit: Larva and adult.

THE SMEARED DAGGER.

Apatela oblinita S. & A.

(Also called *Acronycta.*)

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 567–568, 1890.

Exhibit: Larva, cocoon, and adult.

THE BRONZED CUTWORM.

Nephelodes minians Guen.

For life history and partial bibliography see Lintner, 1st Rpt. St. Ent. N. Y., pp. 99–110, 1882; Riley, Rpt. U. S. Dept. Agric. f. 1890, pp. 244–246, 1891.

Exhibit: Larva and adult.

THE CABBAGE LOOPER.

Autographa brassicæ Riley.

(Formerly *Plusia.*)

For general account and life history see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 60–69, 1902.

Exhibit: Larva, adult, and figure.

THE NAIS TIGER-MOTH.

Apantesis nais Dru.

For account see Beutenmuller, "Cat. Lepid. N. Y." Ann. Acad. N. Y., p. 206, 1890.

Exhibit: Adult.

ZEBRA CATERPILLAR.

Mamestra picta Harr.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 42–43, 1903.

EXHIBIT: Larva and adult.

THE ISABELLA TIGER-MOTH.

Isia isabella S. & A.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 44–45, 1903.

EXHIBIT: Larva and adult.

THE NORTHERN CLOUDY-WING.

Thorybes pylades Scud.

(Formerly *Eudamus.*)

EXHIBIT: Adult.

THE COMYNTAS BUTTERFLY.

Everes comyntas Godt.

(Formerly *Lycæna.*)

For brief account see Lintner, 4th Rpt. N. Y. St. Ent., p. 137, 1888.

EXHIBIT: Adult.

THE AMERICAN COPPER.

Heodes hypophlœas Bd.

(Formerly *Chrysophanus.*)

EXHIBIT: Adult.

LEMONIAS EDITHA Bd.

(Formerly *Melitæa.*)

EXHIBIT: Figure.

SOUTHERN DOG-FACE BUTTERFLY.

Zerene cæsonia Stall.

(Formerly *Colias.*)

For brief notice see Thomas, 10th Rpt. St. Ent. Ill., p. 78, 1881; Howard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., p. 84, 1897.

EXHIBIT: Adult.

THE ORANGE SULPHUR.

Eurymus eurytheme Bd.

(Formerly *Colias.*)

For brief account see French, 7th Rpt. St. Ent. Ill., pp. 147–148, 1878.

EXHIBIT: Larva and adult.

THE YELLOW BUTTERFLY.

Eurymus philodice Godt.

(Formerly *Colias.*)

For brief account see Davis, Bul. 116, Mich. Agr. Expt. Sta., p. 61, 1894.

EXHIBIT: Adult.

THE CLOUDLESS SULPHUR.

Callidryas eubule Linn.

For brief account see French, 7th Rpt. St. Ent. Ill., pp. 147–148, 1878.

EXHIBIT: Larva, pupa, and adult.

THE BLACK-BORDERED YELLOW.

Eurema nicippe Cram.

(Formerly called *Terias.*)

For brief account see French, 7th Rpt. St. Ent. Ill., p. 148, 1878.

EXHIBIT: Larva, pupa, and adult.

THE LITTLE SULPHUR.

Eurema euterpe Men.

(Formerly *Terias lisa.*)

For brief account see French, 7th Rpt. St. Ent. Ill., p. 148, 1878.

EXHIBIT: Adult.

OLETHREUTES INSTRUTANA Clem.

EXHIBIT: Adult.

THE CLOVER HAY WORM.

Hypsopygia costalis Fab.

(Formerly called *Asopia* and *Pyralis.*)

For bibliography and general account see Lintner, 11th Rpt. St. Ent. N. Y., pp. 145–151, 1896.

EXHIBIT: Larva and adult.

THE MEAL SNOUT-MOTH.

Pyralis farinalis Linn.

For short account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., pp. 10–11, 1897.

EXHIBIT: Larva, pupa, cocoon, and adult.

THE CLOVER PLANT-LOUSE.

Macrosiphum trifolii Perg.

(Attacks dandelion, oats, red clover, strawberry, wheat, &c.)

For general account see Pergande, Bul. 44, Div. Ent., U. S. Dept. Agric., pp. 21–23, 1904.

EXHIBIT: Figure.

THE TWO-STRIPED LOCUST.

Melanoplus bivittatus Say.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 363–368, pl. 24, fig. 5, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 31–32, 1891.

EXHIBIT: Adult and figure.

THE LESSER LOCUST.

Melanoplus atlanis Riley.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 178–183, pl. 12, fig. 7, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 26–27, 1891.

EXHIBIT: Adult.

THE DIFFERENTIAL LOCUST.

Melanoplus differentialis Thos.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 349–354, pl. 23, figs. 3 and 4; Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., pp. 7–26, 1901.

EXHIBIT: Adult.

RED-LEGGED LOCUST.

Melanoplus femur-rubrum DeG.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 278–285; pl. 1, fig. h; pl. 19, figs. 1–3, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 27–28, 1891.

EXHIBIT: Adult.

THE ROCKY-MOUNTAIN LOCUST.

Melanoplus spretus Thos.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., vol. XX, pp. 184–190, pl. 12, fig. 8, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 9–26, 1891.

EXHIBIT: Adult.

INJURING THE FLOWERS AND SEEDS.

THE CLOVER-FLOWER MIDGE.

Cecidomyia leguminicola Lint.

(Should be known as *Dasyneura trifolii* Lint.)

For general account see Riley, Rpt. U. S. Dept. Agric., 1878, pp. 250–252, 1879.

EXHIBIT: Cocoon, adult, and figure.

THE CLOVER-SEED CHALCIS-FLY.

Bruchophagus funebris How.

For brief accounts see Hopkins, Bul. 6, n. s., Div. Ent., U. S. Dept. Agric., p. 73, 1896, and Bul. 17, n. s., p. 45, 1898; Titus, Bul. 44, Div. Ent., U. S. Dept. Agric., pp. 77–80, 1904.

EXHIBIT: Adult and work.

THE CLOVER-SEED WORM.

Enarmonia interstinctana Clem.

(Formerly called *Grapholitha*.)

For bibliography and general account see Lintner, 11th Rpt. St. Ent. N. Y., pp. 152–157, 1896.

EXHIBIT: Pupa, adult, and work.

INSECTS INJURIOUS TO SUGAR BEET.

For general articles see Forbes and Hart, Bul. 60, Ill. Agr. Expt. Sta., 136 pp., 1900; Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., 71 pp., 1903.

RED-LEGGED LOCUST.

Melanoplus femur-rubrum DeG.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 278–285, pl. 1, fig. h. pl. 19, figs. 1–4, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 27–28, 1891.

EXHIBIT: Adult and figure.

THE DIFFERENTIAL LOCUST.

Melanoplus differentialis Thos.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 349–354, pl. 23, figs. 3 and 4, 1897; also Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., pp. 7–26, 1901.

EXHIBIT: Adult and figure.

THE ROCKY-MOUNTAIN LOCUST.

Melanoplus spretus Thos.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 184–190, pl. 12, fig. 8, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 9–26, 1891.

EXHIBIT: Adult.

THE TWO STRIPED LOCUST.

Melanoplus bivittatus Say.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 363–368, pl. 24, fig. 5, 1897.

EXHIBIT: Adult. nymph, and figure.

THE LESSER LOCUST.

Melanoplus atlanis Riley.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 178–183, pl. 12, fig. 7, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 26–27, 1891.

EXHIBIT: Adult.

THE CAROLINA LOCUST.

Dissosteira carolina Linn.

For short account see Forbes and Hart, Bul. 60, Ill. Agr. Expt. Sta., pp. 479–480, 1900.

EXHIBIT: Nymph, adult, and parasite *Frontina frenchii* Will.

THE BEET LEAF-MINER.

Pegomya vicina Lint.

EXHIBIT: Adult and figure.

THE BEET CHLOROPS.

Chlorops assimilis Macq.

EXHIBIT: Puparium and adult.

THE COMMON ARMY WORM.

Heliophila unipuncta Harr.

(Formerly *Leucania.*)

For bibliography and life history see Lintner, 12th Rept. St. Ent. N. Y., pp. 190–214, 1896.

EXHIBIT: Larva and adult.

THE VARIEGATED CUTWORM.

Peridroma saucia Hübn.

For general bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 46–64, 1902.

EXHIBIT: Larva, adult, and figure.

THE PURSLANE CATERPILLAR.

Copidryas gloveri G. & R.

EXHIBIT: Larva and adult.

FALL ARMY WORM.

Laphygma frugiperda S. & A.

For full bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 40–45, 1901.

EXHIBIT: Larva, adult, and figure.

THE WHITE-LINED SPHINX.

Deilephila lineata Fabr.

EXHIBIT: Adult and figure.

THE BEET ARMY WORM.

Caradrina exigua Hübn.

For general articles see Gillette, 12th Rpt. Colo. Agr. Expt. Sta., p. 39, 1900; Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 37–46, 1902.

EXHIBIT: Adult and figure.

THE ZEBRA CATERPILLAR.

Mamestra picta Harr.

For bibliography and general life history see Felt, 14th Rpt. N. Y. St. Ent., pp. 201–207, 1898.

EXHIBIT: Larva and adult.

GARDEN WEB-WORM.

Loxostege similalis Guen.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 39–40, 1903.

EXHIBIT: Cocoon, adult, and figure.

THE SUGAR-BEET WEBWORM.

Loxostege sticticalis Linn.

For general account see Forbes, Bul. 60, Ill. Agr. Expt. Sta., p. 457–459, 1900.

EXHIBIT: Cocoon, pupa, adult, and figure.

THE ISABELLA TIGER MOTH.

Isia isabella S. & A.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 44–45, 1903.

EXHIBIT: Larva, adult, and figure.

THE CLOVER CUTWORM.

Mamestra tripolii Rott.

For account see Riley, Rept. U. S. Dept. Agric., 1883, pp. 123–124, 1883.

EXHIBIT: Larva, adult, and parasites *Ophion purgatum* Say. and *Euphorocera claripennis* Macq.

THE CABBAGE LOOPER.

Autographa brassicæ Riley.

For general account and life history see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 60–69, 1902.

EXHIBIT: Larva, adult, and parasite *Limneria tibiator* Cr

THE GARDEN FLEA-HOPPER.

Halticus uhleri Giard.

For general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 57–62, 1899.

EXHIBIT: Adult and figure.

THE TARNISHED PLANT-BUG.

Lygus pratensis Linn.

For general account see Riley, Rept. U. S. Dept. Agric. f. 1884, pp. 312–315, 1885.

EXHIBIT: Adult and figure.

THE SANDY GROUND BUG

Emblethis arenarius Linn.

EXHIBIT: Adult.

PURSLANE BUG.

Geocoris bullatus Say.

EXHIBIT: Adult.

THE MILITARY BUG.

Hadronema militaris Uhl.

EXHIBIT: Adult.

CLOUDED PIGWEED BUG.

Sphragisticus nebulosus Fall.

EXHIBIT: Adult.

THE BROWN LEAF-HOPPER.

Agallia sanguinolenta Prov.

EXHIBIT: Adult.

THE CHINCH-BUG.

Blissus leucopterus Say.

For general article and life history see Webster, Bul. 15, n. s., Div. Ent., U. S. Dept. Agric., 82 pp. 1898.

EXHIBIT: Eggs, nymph, adult, and figure.

THE FALSE CHINCH-BUG.

Nysius angustatus Uhl.

(Attacks many garden crops.)

EXHIBT: Adult and figure.

HOODED PLANT-BUG.

Euthoctha galeator Fab.

EXHIBIT: Eggs, nymph, and adult.

THE IMBRICATED SNOUT-BEETLE.

Epicaerus imbricatus Say.

For detailed account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 62–67, 1899.

EXHIBIT: Adult and figure.

THE GIBBOUS JUNE BEETLE.

Lachnosterna gibbosa Burm.

For general account of white grub see Forbes, 18th Rept. St. Ent. Ill., pp. 109–144, 1894.

EXHIBIT: Adult and figure.

THE 12-SPOTTED CUCUMBER BEETLE.

Diabrotica duodecempunctata Ol.

For general account and remedies see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 12–13, 1903; Quaintance, Bul. 26, n. s., pp. 35–40, 1900.

EXHIBIT: Adult, figures, and parasite *Celatoria diabroticæ.*

MONOCREPIDIUS VESPERTINUS Fab.

EXHIBIT: Adult and figure.

PENCILED SNOUT-BEETLE.

Centrinus penicellus Hbst.

EXHIBIT: Adult.

THE GREATER SUGAR-BEET LEAF-BEETLE.

Monoxia puncticollis Say.

EXHIBIT: Adult and figure.

THE LESSER SUGAR-BEET LEAF-BEETLE.

Monoxia consputa Lec.

EXHIBIT: Adult and figure.

THE GRAPE-VINE COLASPIS.

Colaspis brunnea Fab.

For general article see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 13–14, 1903.

Exhibit: Adult and figure.

WHITE GRUB; MAY BEETLE.

Lachnosterna fusca Fröh.

For account of white grubs injuring corn see Forbes, 18th Rept. St. Ent. Ill., pp. 109–145, 1894.

Exhibit: Adult and figure.

THE CONVEX FLEA-BEETLE.

Psylliodes convexior Lec.

Exhibit: Adult.

THE PALE-STRIPED FLEA-BEETLE.

Systena blanda Mels.

For general articles see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 22–29, 1900; Bul. 43, Div. Ent., p. 16, 1903.

Exhibit: Adult and figure.

THE SPINACH FLEA-BEETLE.

Disonycha xanthomelæna Dalm.

Exhibit: Adult, figure, and parasite *Hypostena barbata* Coq.

THE WAVY-NECKED FLEA-BEETLE.

Disonycha crenicollis Say.

Exhibit: Adult.

THE TRIANGULAR FLEA-BEETLE.

Disonycha triangularis Say.

Exhibit: Adult.

THE CUCUMBER FLEA-BEETLE.

Epitrix cucumeris Harr.

For short account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 89–90, 1899.

Exhibit: Adult and figure.

THE TOOTHED FLEA-BEETLE.

Chætocnema denticulata Illig.

Exhibit: Adult.

THE ASH-GRAY BLISTER-BEETLE.

Macrobasis unicolor Kby.

For short article see Chittenden, Yearbook, U. S. Dept. Agric., f. 1898, pp. 249–250, 1899.

Exhibit: Adult.

THE SPOTTED BLISTER-BEETLE.

Epicauta maculata Say.

For general account see Saunders, Bul. 57, S. Dak. Agric. Expt. Sta., p. 52, 1898; Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 24–25, 1903.

EXHIBIT: Adult and figure.

THE MARGINED BLISTER-BEETLE.

Epicauta cinerea Först.

For brief account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 25, 1903.

EXHIBIT: Adult and figure.

BLACK BLISTER-BEETLE.

Epicauta pennsylvanica DeG.

For brief account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 25, 1903.

EXHIBIT: Adult and figure.

THE STRIPED BLISTER-BEETLE.

Epicauta vittata Fabr.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Agric., pp. 22–23, 1903.

EXHIBIT: Adult and figure.

NUTTALL'S BLISTER-BEETLE.

Cantharis nuttalli Say.

For short article see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 27, 1903.

EXHIBIT: Adult and figure.

INSECTS INJURIOUS TO TOBACCO.

For general articles see Howard, Farmers' Bul. 120, U. S. Dept. Agric., 1900; Yearbook, 1898, pp. 120–150.

NORTHERN TOBACCO WORM; TOMATO WORM.

Phlegethontius quinquemaculata Haw.

(Formerly *Protoparce celeus.*)

For general account see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 10–14, 1900.

EXHIBIT: Larva, pupa, adult, and figure.

SOUTHERN TOBACCO WORM; HORNBLOWER.

Phlegethontius sexta Joh.

(Formerly *Protoparce carolina.*)

For general account see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 10–14, 1900; Alwood, Bul. 17, n. s., Div. Ent., U. S. Dept. Agric., pp. 72–74, 1898.

EXHIBIT: Larva, pupa, adult, and figure.

TOBACCO BUDWORM.

Chloridea virescens Fab.

(Formerly *Heliothis rhexiæ* S. & A.)

For general account see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 14–16, 1900.

EXHIBIT: Pupa, adult, and figure.

THE VARIEGATED CUTWORM.

Peridroma saucia Hübn.

For general bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 46–64, 1901.

EXHIBIT: Adult and figure.

THE BLACK CUTWORM.

Agrotis ypsilon Rott.

For general account see Riley, Rpt. U. S. Dept. Agric. f. 1884, pp. 294–295, 1885.

EXHIBIT: Adult and figure.

CORN-EAR WORM; COTTON BOLLWORM.

Heliothis obscura Fab.

(Feeds also on tobacco and tomato. For special case illustrating life history see under cotton and corn exhibits.)

For life history and general account see Quaintance, Farmers' Bul., 191, U. S. Dept. Agric., 1904.

EXHIBIT: Larva, pupa, adult, and figure.

GRANULATED CUTWORM.

Feltia annexa Tr.

For general account see Riley, Rpt. U. S. Dept. Agric. 1884, pp. 291–292, 1885. For description of stages see French Canad. Ent., v. XIV, pp. 207–210, 1882.

EXHIBIT: Adult and figure.

THE PRETTY CUTWORM.

Mamestra legitima Grt.

For brief account see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 24–25, fig. 20, 1900.

EXHIBIT: Larva, pupa, adult, and figure.

THE COMMELINA OWLET MOTH.

Prodenia commelinæ S. & A.

For life history and general account see Chittenden, Bul. 27, n. s., Div. Ent. U. S. Dept. Agric., pp. 59–64, pl. iv, fig. 1, 1901.

EXHIBIT: Larva, adult, and figure.

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THE CABBAGE LOOPER.

Autographa brassicæ Riley.

For general account and life history see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 60–69, 1902.

EXHIBIT: Adult and figure.

ŒCANTHUS QUADRIMACULATUS Beut.

For brief notice as *Œ. fasciatus* see Howard, Farmers' Bul. 120, U. S. Dept. Agric., p. 25, 1900.

EXHIBIT: Adult.

TOBACCO SUCKFLY.

Dicyphus minimus Uhl.

For general account see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 16–18, 1900.

EXHIBIT: Adult and figure.

TOBACCO SPLITWORM; POTATO-TUBER WORM.

Phthorimæa operculella Zell.

(Works in leaves and stems. Formerly called *Gelechia solanella.*)

For general accounts see Riley and Howard, Insect Life, v. IV, pp. 239–242, 1892; Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 19–22, 1900.

EXHIBIT: Adult and figure.

THE TOBACCO FLEA-BEETLE.

Epitrix parvula Fab.

For general account and life history see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 85–87, 1899; Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 5–10, 1900.

EXHIBIT: Adult and figure.

THE TOBACCO STALK WEEVIL.

Trichobaris mucorea Lec.

For general account see Chittenden, Bul. 38, Div. Ent., U. S. Dept. Agric., pp. 66–70, 1902.

EXHIBIT: Cocoon, adult, and work.

EUSCHISTUS VARIOLARIUS Beauv.

For brief accounts see Garman, Bul. 66, Ky. Agr. Exp. Sta., pp. 33–34, 1897; Howard, Farmer's Bul. 120, U. S. Dept. Agric., pp. 18–19, 1900.

EXHIBIT: Adult.

THE TOBACCO THRIPS.

Thrips tabaci Lind.

For brief account see Howard, Farmer's Bul. 120, U. S. Dept. Agric., pp. 24–25, 1900.

EXHIBIT: Figure.

THE CIGARETTE BEETLE.

Lasioderma testaceum Dufts.

(Formerly *L. serricorne.*)

For general account see Chittenden, Bul. 4, n. s., revis. ed., Div. Ent., U. S. Dept. Agric., pp. 126–127, 1897.

EXHIBIT: Adult, work, and figure.

THE DRUG-STORE BEETLE.

Sitodrepa panicea Linn.

For general account see Chittenden, Bul. 4, n. s., revis. ed., Div. Ent., U. S. Dept. Agric., pp. 124–126, 1897.

EXHIBIT: Adult and figure.

INSECTS INJURIOUS TO BEANS AND PEAS.

THE LIMA-BEAN STEM-BORER.

Monoptilota nubilella Hulst.

(Bores in stalks of Lima beans.)

For life history and general account see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 9–17, 1900.

EXHIBIT: Larva, cocoon, adult, work, and figure.

SMALLER CORN STALK-BORER.

Elasmopalpus lignosellus Zell.

For life history and general account see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 17–22, 1900.

EXHIBIT: Larva, adult, and figure.

NUTTALL'S BLISTER BEETLE.

Cantharis nuttalli Say.

For short article see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 27, 1903.

EXHIBIT: Adult and figure.

THE ASH-GRAY BLISTER BEETLE.

Macrobasis unicolor Kby.

For short article see Chittenden, Yearbook, U. S. Dept. Agric., f. 1898, pp. 249–250, 1899.

EXHIBIT: Adult.

THE BEAN LEAF-BEETLE.

Cerotoma trifurcata Först.

(Formerly *C. caminea* Fab.)

For general account see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 253–254.

EXHIBIT: Adult and figure.

THE BEAN LADYBIRD.

Epilachna corrupta Muls.

For general account see Gillette, Bul. 47, Colorado Agr. Expt. Sta., pp. 41–43, 1898; Chittenden, Yearbook, U. S. Dept. Agric., f. 1898, pp. 251–253, 1899.

EXHIBIT: Adult and figure.

THE 12-SPOTTED CUCUMBER BEETLE.

Diabrotica duodecempunctata Ol.

For general accounts and remedies see Quaintance, Bul. 26, n. s., Div. Ent., U. S. Dept. Agric., pp. 35–40, 1900; Chittenden, Bul. 43, pp. 12–13, 1903.

EXHIBIT: Adult.

THE IMBRICATED SNOUT-BEETLE.

Epicaerus imbricatus Say.

For detailed account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 62–67, 1899; for general account, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 28–29, 1903.

EXHIBIT: Adult.

THE BANDED FLEA-BEETLE.

Systena tæniata Say.

For short account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 17, 1903.

EXHIBIT: Adult.

THE PALE-STRIPED FLEA-BEETLE.

Systena blanda Melsh.

For general article see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 22–29, 1900; Bul. 43, p. 16, 1903.

EXHIBIT: Adult and figure.

THE LEAF-MINING LOCUST BEETLE.

Odontota dorsalis Thunb.

(Lives on locust, but attacks beans and other leguminous plants.)

For full life history, bibliography, and distribution see Chittenden, Bul. 38, Div. Ent., U. S. Dept. Agric., pp. 70-73, 1902.

EXHIBIT: Adult and figure.

THE DISTENDED MAY BEETLE.

Lachnosterna farcta Lec.

For short notices see Comstock, Rpt. U. S. Dept. Agric., 1879, pp. 247–248, Pl. V, fig. 5, 1880; Howard, Bul. 22, n. s., Div. Ent., U. S. Dept. Agric., p. 107, 1900.

EXHIBIT: Adult.

THE GARDEN FLEA-HOPPER.

Halticus uhleri Giard.

For general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 57-62, 1899.

EXHIBIT: Adult and figure.

THE DINGY CUTWORM.

Feltia subgothica Haw.

For brief account see Chittenden, Yearbook, U. S. Dept. Agric., f. 1898, p. 257, 1899.

EXHIBIT: Adult.

SALT-MARSH CATERPILLAR.

Estigmene acræa Dru.

(Formerly called *Leucarctia.*)

For short account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 43–44, fig 41, 1903.

EXHIBIT: Adult.

YELLOW-BEAR CATERPILLAR.

Diacrisia virginica Fab.

(Formerly called *Spilosoma.*)

For general account see Lugger, 4th Rpt. State Ent. Minn., pp. 79–81, fig. 78, 1899.

EXHIBIT: Adult and figure.

THE BEAN CUTWORM.

Ogdoconta cinereola Guen.

(Feeds on buds and leaves.)

For life history and general account see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 98–100, 1902.

EXHIBIT: Adult and figure.

THE ROLLER WORM.

Eudamus proteus Linn.

(Feeds on buds and leaves.)

For general article and life history see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 92–96, 1902.

EXHIBIT: Larva, chrysalis, adult, and figure.

COMMON BEAN WEEVIL.

Bruchus obtectus Say.

For general account and life history see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 239–242.

EXHIBIT: Adult, work, and figure.

THE PEA WEEVIL.

Bruchus pisorum Linn.

For general account and life history see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 234–239.

EXHIBIT: Adult, work, and figure.

THE COWPEA WEEVIL.

Bruchus chinensis Linn.

For general account and life history see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 242–245.

EXHIBIT: Adult and figure.

FOUR-SPOTTED BEAN-WEEVIL.

Bruchus quadrimaculatus Boh.

For general account and life history see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 245–247.

EXHIBIT: Adult and figure.

THE LENTIL WEEVIL.

Bruchus lentis Boh.

For brief account see Chittenden, Yearbook, U. S. Dept. Agric., 1898, p. 248.

EXHIBIT: Adult.

EUROPEAN BEAN-WEEVIL.

Bruchus rufimanus Boh.

For general account see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 247–248.

EXHIBIT: Adult.

THE MEXICAN BEAN-WEEVIL.

Spermophagus pectoralis Shp.

For brief account see Chittenden, Yearbook, U. S. Dept. Agric., 1898, p. 248.

EXHIBIT: Adult and figure.

THE GRAY HAIR-STREAK.

Uranotes melinus Hübn.

(Works in pods of peas and beans, and in silk corn. Formerly *Thecla*.)

For brief article see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 101–102, 1902.

EXHIBIT: Larva, pupa, adult, and figure.

BOLLWORM; CORN-EAR WORM.

Heliothis obscura Fab.

(See special case for full life history with illustrations.)

For life history and general account see Quaintance, Farmers' Bul. 191, U. S. Dept. Agric., 1904.

EXHIBIT: Larva, adult, work, and figure.

THE IMPORTED PEA-MOTH.

Semasia nigricana Steph.

For general accounts and life history see Fletcher, Rpt. Ent. and Bot., Can. Dept. Agric., 1900, p. 214, 1901; Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 96–98, 1902.

EXHIBIT: Adult and figure.

INSECTS INJURIOUS TO CRUCIFERS.

IMPORTED CABBAGE-WORM.

Pontia rapæ Sch.

(Formerly *Pieris.*)

For general articles see Riley, Rpt. U. S. Dept. Agric., f., 1883, pp. 108–113, 1884; Lugger, 1st Rpt. St. Ent. Minn., pp. 71–77, Pl. VI, 1896.

EXHIBIT: Larva, chrysalis, and adult.

THE LARGE CABBAGE BUTTERFLY.

Pontia monuste Linn.

For general article see Riley, Rpt. U. S. Dept. Agric., 1883, pp. 117–118, 1884.

EXHIBIT: Adult.

THE POT-HERB BUTTERFLY.

Pontia oleracea Boisd.

(Formerly *Pieris.*)

For general account see Riley, Rpt. U. S. Dept. Agric., 1883, pp. 115–117, 1884.

EXHIBIT: Chrysalis and adult.

THE SOUTHERN CABBAGE WORM.

Pontia protodice Boisd.

For general articles see Riley, Rpt. U. S. Dept. Agric., f., 1883, pp. 114–115, 1884; Lugger, 1st Rpt. St. Ent. Minn., pp. 71–77, Pl. VII, 1896.

EXHIBIT: Chrysalis and adult.

GARDEN WEB-WORM.

Loxostege similalis Guen.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 39–40, 1903.

EXHIBIT: Adult and figure.

GRANULATED CUTWORM.

Feltia annexa Tr.

For description of eggs and larval stage see French, Can. Ent., v. XIV, pp. 207-210, 1882. For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 291–292, 1885.

EXHIBIT: Larva, pupa, adult, and figure.

THE STRIPED CUTWORM.

Feltia subgothica Haw.

For general account see Slingerland, Bul. 104, Cornell Univ. Agric. Expt. Sta., pp. 274–279, 1895.

Exhibit: Larva, adult, and figure.

SHAGREENED CUTWORM.

Feltia malefida Guen.

(Larvæ destroy young plants.)

For short account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 292–293, 1885.

Exhibit: Adult and figure.

THE VARIEGATED CUTWORM.

Peridroma saucia Hübn.

For general bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 46–64, 1902.

Exhibit: Larva, adult, and figure.

THE BLACK CUTWORM.

Agrotis ypsilon Rott.

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 294–295, 1885.

Exhibit: Larva, adult, and figure.

THE SPECKLED CUTWORM.

Mamestra subjuncta G. & R.

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, p. 296, 1885.

Exhibit: Larva, pupa, and adult.

THE GLASSY CUTWORM.

Hadena devastatrix Brace.

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 296–297, 1885.

Exhibit: Adult.

THE W-MARKED CUTWORM.

Noctua clandestina Harr.

For general account see Slingerland, Bul. 104, Cornell Univ. Agr. Expt. Sta., pp. 571–574, 1895.

Exhibit: Larva and adult.

FALL ARMY WORM.

Laphygma frugiperda S. & A.

For full bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 40–45, 1901.

Exhibit: Larva, adult, and figure.

THE CROSS-STRIPED CABBAGE WORM.

Evergestis rimosalis Guen.

(Formerly *Pionea.*)

For general article see Chittenden, Bul. 33 n. s., Div. Ent., U. S. Dept. Agric., pp. 54–59, 1902.

Exhibit: Larva, pupa, cocoon, adult, and figure.

THE SALT-MARSH CATERPILLAR.

Estigmene acræa Dru.

(Formerly called *Leucarctia.*)

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 43–44, 1903.

Exhibit: Larva, cocoon, and adult.

THE CABBAGE LOOPER.

Autographa brassicæ Riley.

For general account and life history see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 60–69, 1902.

Exhibit: Larva, cocoon, pupa, and adult.

THE DIAMOND-BACK MOTH.

Plutella maculipennis Curtis.

(Formerly *P. cruciferarum.*)

For general account see Lugger, 1st. Rpt. St. Ent. Minn., p. 79, Pl. VI, 1896.

Exhibit: Larva, cocoon, adult, and work.

HARLEQUIN CABBAGE-BUG.

Murgantia histrionica Hahn.

(Feeds on cruciferous plants of all kinds.)

For general accounts see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 309–312, 1885; Smith, Bul. 121, N. J. Agr. Expt. Sta., pp. 3–6, 1897.

Exhibit: Eggs, nymph, and adult.

THE TARNISHED PLANT-BUG.

Lygus pratensis Linn.

For general account see Riley, Rpt. U. S. Dept. Agric., f. 1884, pp. 312–315, 1885.

Exhibit: Adult.

THE EGGPLANT FLEA-BEETLE.

Epitrix fuscula Cr.

For general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 87–89, 1899.

Exhibit: Adult and figure.

THE RED TURNIP BEETLE.

Entomoscelis adonidis Pallas.

For partial life history, short accounts, and bibliography see Fletcher, Rpt. Ent. and Bot.; Can. Dept. Agr., 1892, pp. 152–155, 1893; loc. cit., 1900, pp. 241, 1901; Chittenden, Bull. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 49–53, 1902.

EXHIBIT: Figure.

WESTERN CABBAGE FLEA-BEETLE.

Phyllotreta albionica Lec.

EXHIBIT: Adult.

HORSE-RADISH FLEA-BEETLE.

Phyllotreta armoraciæ Koch.

For general accounts see Chittenden, Ins. Life, v. VII, pp. 404–406, 1895; Bul. 9, n. s., Div. Ent., U. S. Dept. Agric., pp. 21–22, 1897.

EXHIBIT: Adult.

THE WESTERN FLEA-BEETLE.

Phyllotreta pusilla Horn.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 18–19, 1903.

EXHIBIT: Adult and figure.

THE STRIPED FLEA-BEETLE.

Phyllotreta vittata Fab.

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 301–304, 1885.

EXHIBIT: Adult.

WAVY-STRIPED FLEA-BEETLE.

Phyllotreta sinuata Steph.

(Formerly *P. zimmermani.*)

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 304–308, 1885.

EXHIBIT: Adult.

THE CAULIFLOWER PYRALID.

Pachyzancla bipunctalis Fab.

(Formerly *Botis repetitalis.*)

For description and brief accounts see Comstock, Rpt. U. S. Dept. Agric., 1880, p. 270, 1881; Riley, Rpt. U. S. Dept. Agric., 1883, pp. 128–129, 1884.

EXHIBIT: Pupa and adult.

THE ZEBRA CATERPILLAR.

Mamestra picta Harr.

For bibliography and general life-history see Felt, 14th Rpt. N. Y. St. Ent., pp. 201–207, 1898.

EXHIBIT: Larva, pupa and adult.

THE CABBAGE MAGGOT.

Pegomya brassicæ Bouché.

(Formerly *Anthomyia.*)

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 319–321, 1885.

Exhibit: Adult.

THE CABBAGE PLANT-LOUSE.

Aphis brassicæ Linn.

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 317–319, 1885.

Exhibit: Adult and work.

IMPORTED CABBAGE WEBWORM.

Hellula undalis Fab.

For general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 51–57, 1899.

Exhibit: Larva, pupa, adult and figure.

THE CABBAGE CURCULIO.

Ceutorhynchus rapæ Gyll.

For general account and partial life history see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 39–50, 1900.

Exhibit: Adult and figure.

THE IMPORTED CABBAGE LEAF-MINER.

Scaptomyza graminum Fall.

(Formerly called *Oscinis brassicæ.*)

See Riley, Rpt. U. S. Dept. Agric., 1884, p. 322, 1885. For short account see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 76–77, 1902.

Exhibit: Adult.

INSECTS INJURIOUS TO POTATO.

THE RINGED MILLIPEDE.

Cambala annulata Say.

Exhibit: Figure.

THE SHORT-WINGED MOLE-CRICKET.

Scapteriscus abbreviatus Scudd.

For general account see Chittenden, Bul. 40, Div. Ent., U. S. Dept. Agric., pp. 117–118, 1903. For account of an allied species *S. didactylus* Latr., see Barrett, Bul. 2, Porto Rico Agric. Expt. Sta., 1902.

Exhibit: Adult.

POTATO-TUBER WORM; TOBACCO SPLIT-WORM.

Phthorimæa operculella Zell.

(Formerly *Lita* and *Gelechia solanella*. Works in stems and tubers.)

For general account see Riley and Howard, Insect Life, v. IV, pp. 239–242, 1892; Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 19–22, 1900.

Exhibit: Adult and figure.

THE POTATO-STALK WEEVIL.

Trichobaris trinotata Say.

For life history and general account see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 9–19, 1902.

Exhibit: Adult and work.

STALK-BORER.

Papaipema nitela Guen.

(Formerly *Gortyna* and *Hydræcia*. Bores in stems of various plants.)

For general account see Bird, Can. Ent., v. XXX, pp. 127–128, 1898.

Exhibit: Adult.

THE LITTLE GREEN TORTOISE-BEETLE.

Cassida pallidula Boh.

(Formerly *C. texana*.)

For short account see Riley, Amer. Nat., v. 17, p. 1070, October [17 Sept.], 1883.

Exhibit: Adult.

THE GOLDEN TORTOISE-BEETLE.

Coptocycla bicolor Fab.

(Formerly *C. aurichalcea*.)

For general account see Sanderson, Bul. 59, Md. Agr. Expt. Sta., pp. 139–140, 1899.

Exhibit: Adult.

COLORADO POTATO-BEETLE.

Leptinotarsa decemlineata Say.

(Formerly *Doryphora*.)

For general account of life history see Smith, Rpt. N. J. Agric. Expt. Sta., 1895, pp. 452–458, 1896.

Exhibit: Egg, larva, pupa, adult, figure, and the following enemies: *Brachinus kansanus* Lec., *Chilocorus bivulnerus* Mels., *Coccinella sanguinea* Linn., *Coccinella novemnotata* Hbst., *Harpalus caliginosus* Fab., *Hippodamia convergens* Güer., *Hippodamia glacialis* Fab., *Lebia atriventris* Say, *Lebia grandis* Htz., *Megilla maculata* DeG., *Nezara hilaris* Say, *Pasimachus elongatus* Lec., *Podisus spinosus* Dall., *Polistes pallipes* Lep., and *Tetracha virginica* Linn.

BOGUS POTATO-BEETLE.

Leptinotarsa juncta Germ.

(This species exhibited merely on account of similarity to preceding species. It feeds on wild Solanums.)

EXHIBIT: Adult.

THREE-LINED POTATO-BEETLE.

Lema trilineata Oliv

For general account see Riley, 1st. Rpt. St. Ent. Mo., pp. 99–100, 1869.

EXHIBIT: Adult and figure.

THE WHITE BLISTER-BEETLE.

Macrobasis albida Say.

For brief account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 26, 1903.

EXHIBIT: Adult.

THE ASH-GRAY BLISTER-BEETLE.

Macrobasis unicolor Kby.

For general account see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 249–250.

EXHIBIT: Adult.

THE STRIPED BLISTER-BEETLE.

Epicauta vittata Fab.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 22–23, 1903.

EXHIBIT: Adult.

BLACK BLISTER-BEETLE.

Epicauta pennsylvanica DeG.

For brief account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 25, 1903.

EXHIBIT: Adult.

THE CROW BLISTER-BEETLE.

Epicauta corvina Lec.

For brief notice see Comstock, Rpt. U. S. Comm. Agric., 1879, p. 251, 1880.

EXHIBIT: Adult.

THE MARGINED BLISTER-BEETLE.

Epicauta cinerea Först.

For brief account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 24, 1903.

EXHIBIT: Adult.

THE SPOTTED BLISTER-BEETLE.

Epicauta maculata Say.

For general accounts see Saunders, Bul. 57, S. Dak. Agric. Expt. Sta., p. 52, 1898; Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 24–25, 1903.

EXHIBIT: Adult and figure.

THE EGG-PLANT FLEA-BEETLE.

Epitrix fuscula Cr.

For general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 87–89, 1899.

EXHIBIT: Adult.

INSECTS INJURIOUS TO SWEET POTATOES.

For general bulletin see Sanderson, Sweet Potato Insects, Bul. 59, Md. Agric. Expt. Sta., 1900.

SWEET-POTATO ROOT-BORER.

Cylas formicarius Fab.

EXHIBIT: Adult and work.

SWEET-POTATO HAWK-MOTH.

Phlegethontius cingulata Fab.

EXHIBIT: Adult.

THE SWEET-POTATO PLUME-MOTH.

Pterophorus monodactylus Linn.

EXHIBIT: Adult.

LARGER SWEET-POTATO SAWFLY.

Schizocerus privatus Nort.

For general account see Marlatt, Insect Life, v. V, pp. 24–27, fig. 6, 1892.

EXHIBIT: Adult and figure.

SWEET-POTATO FLEA-BEETLE.

Chætocnema confinis Cr.

EXHIBIT: Adult.

THE CUCUMBER FLEA-BEETLE.

Epitrix cucumeris Harr.

For short account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 89–90, 1899.

EXHIBIT: Adult.

THE MOTTLED TORTOISE BEETLE.

Coptocycla signifera Hbst.

(Formerly called *C. guttata.*)

EXHIBIT: Adult.

BLACK-LEGGED TORTOISE BEETLE.

Cassida nigripes Oliv.

EXHIBIT: Adult and work.

TWO-STRIPED TORTOISE BEETLE.

Cassida bivittata Say.

EXHIBIT: Adult.

THE GREEN TORTOISE BEETLE.

Physonota unipunctata Say.

For brief notices see Hamilton, Canad. Ent., v. XVI, pp. 134–135, 1884, and Caulfield, l. c., p. 227.

EXHIBIT: Adult.

THE ARGUS TORTOISE BEETLE.

Chelymorpha argus Licht.

(Also called *C. cassidea.*)

EXHIBIT: Adult.

INSECTS INJURIOUS TO TOMATO.

NORTHERN TOBACCO WORM; TOMATO WORM.

Phlegethontius quinquemaculata Haw.

(Formerly *Protoparce celeus.*)

For general account see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 10–14, 1900.

EXHIBIT: Larva and adult.

SOUTHERN TOBACCO WORM; HORNBLOWER.

Phlegethontius sexta Joh.

(Formerly *Protoparce carolina.*)

For general accounts see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 10–14, 1900; Alwood, Bul. 17, n. s., Div. Ent., U. S. Dept. Agric., pp. 72–74, 1898.

EXHIBIT: Larva and adult.

THE STALK BORER.

Papaipema nitela Guen.

For general accounts see Bird, Can. Ent., v. XXX, pp. 127–128, 1898; Lugger, 4th Rpt. State Ent. Minn., pp. 167–168, 1899.

EXHIBIT: Pupa and adult.

THE COMMELINA OWLET MOTH.

Prodenia commelinæ S. & A.

For life history and general account see Chittenden, Bull. 27, n. s., Div. Ent. U. S. Dept. Agric., pp. 59–64, Pl. IV, fig. 1, 1901.

EXHIBIT: Larva and adult.

CORN-EAR WORM; COTTON BOLLWORM.

Heliothis obscura Fab.

(Feeds also on tobacco and tomato; see under cotton and corn exhibits.)

For life history and general account see Quaintance, Farmers' Bul. 191, 1904.

EXHIBIT: Larva and adult.

INSECTS INJURIOUS TO ASPARAGUS.

For general article on asparagus insects see Chittenden, Bul. 10, n. s., pp. 54–62, 1898.

THE ASPARAGUS MINER.

Agromyza simplex Loew.

For general account see Sirrine, Bul. 189, N. Y. Agric. Exp. Stat., pp. 277–282, 1900.

EXHIBIT: Adult.

LOPIDEA MEDIA Say.

EXHIBIT: Adult.

THE LESSER LOCUST.

Melanoplus atlanis Riley.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 178–183; pl. 12, fig. 7, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 26–27, 1891.

EXHIBIT: Adult.

THE TWO-STRIPED LOCUST.

Melanoplus bivittatus Say.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 363–368, pl. 24, fig. 5, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 31–32, 1891.

EXHIBIT: Adult and figure.

RED-LEGGED LOCUST.

Melanoplus femur-rubrum DeG.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 278–285, pl. 1, fig. h; pl. 19, figs. 1–4, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 27–28, 1891.

EXHIBIT: Adult.

MELANOPLUS PROPINQUUS Scudd.

For original description, see Scudder, Proc. U. S. N. M., v. XX; pp. 285–286, pl. 18, fig. 9, 1897.

EXHIBIT: Adult.

TWELVE-SPOTTED ASPARAGUS-BEETLE.

Crioceris duodecempunctata Linn.

For detailed account, see Chittenden, Yearbook, U. S. Dept. Agric., 1896, pp. 349–352, 1897.

EXHIBIT: Adult, figure, and adult of enemy, *Podisus spinosus* Dall.

THE ASPARAGUS BEETLE.

Crioceris asparagi Linn.

For detailed account, see Chittenden, Yearbook, U. S. Dept. Agric., 1896, pp. 341–349. For bibliography and general account, see Lintner, 11th Rept. St. Ent. N. Y., pp. 177–188, 1896.

EXHIBIT: Larva, adult, figure, and enemy, *Stiretrus anchorago* Fab.

THE TWELVE-SPOTTED CUCUMBER BEETLE.

Diabrotica duodecempunctata Ol.

For general accounts and remedies, see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 12–13, 1903; Quaintance, Bul. 26, n. s., Div. Ent., U. S. Dept. Agric., pp. 35–40, 1900.

EXHIBIT: Adult and figure.

FALSE BUD-WORM; COTTON BOLLWORM.

Heliothis obscura Fab.

(Known also as *Heliothis armiger* Hübn. For full life-history exhibit, see under cotton and corn.)

For life history and general account, see Quaintance, Farmers' Bul. 191, U. S. Dept. Agric., 1904.

EXHIBIT: Adult.

ZEBRA CATERPILLAR.

Mamestra picta Harr.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 42–43, 1903.

EXHIBIT: Larva, adult, and figure.

THE PRETTY CUTWORM.

Mamestra legitima Grt.

For brief account see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 24–25, fig. 20, 1900.

EXHIBIT: Larva, adult, and figure.

CRANBERRY SPANWORM.

Cleora pampinaria Guen.

For general account see Smith, Farmers' Bul. 178, pp. 19–21, 1903.

EXHIBIT: Larva, pupa, and adult.

25528—No. 47—04——7

THE RED-BANDED LEAF-ROLLER.

Eulia triferana Walk.

(Formerly *Lophoderus.*)

For brief account see Lugger, 4th Rept. State Entom. Minn. p. 231, 1899.

EXHIBIT: Larva, pupa, and adult.

THE SULPHUR-COLORED TORTRIX.

Epagoge sulfureana Clem.

(Formerly *Dichelia.*)

For brief account see Lugger, 4th Rept. State Entom. Minn., pp. 232–233, 1899.

EXHIBIT: Pupa and adult.

INSECTS INJURIOUS TO CUCURBITS.

SQUASH-VINE BORER.

Melittia satyriniformis Hübn.

(Formerly *Ægeria cucurbitæ.*)

For life history and general accounts see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 34–40, 1899; Circ. 38, Div. Ent., U. S. Dept. Agric., 1899.

EXHIBIT: Larva, pupa, cocoon, adult, and figure.

PICKLE WORM.

Diaphania nitidalis Cram.

(Formerly *Eudioptis* and *Margaronia.*)

For general accounts and bibliography see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 40–42, 1899; Lintner, 11th Rpt. N. Y. St. Ent., pp. 126–133, 1896.

EXHIBIT: Pupa, cocoon, adult, and figure.

MELON CATERPILLAR.

Diaphania hyalinata Linn.

For general accounts and bibliography see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 42–44, 1899; Lintner, 11th Rpt. N. Y. St. Ent., pp. 134–138, 1896.

EXHIBIT: Larva, pupa, adult, and figure.

NORTHERN LEAF-FOOTED PLANT-BUG.

Leptoglossus oppositus Say.

For life history and general account see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 18–25, 1902.

EXHIBIT: Nymph, adult, and figure.

STRIPED CUCUMBER BEETLE.

Diabrotica vittata Fab.

For general accounts see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 48–51, 1899; Cir. 31, Div. Ent., U. S. Dept. Agric., 1898.

Exhibit: Adult, work, and figure.

TWELVE-SPOTTED CUCUMBER BEETLE.

Diabrotica duodecempunctata Oliv.

For general articles see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 12–13, 1903; Quaintance, Bul. 26, n. s., pp. 35–40, 1900.

Exhibit: Adult.

THE CUCUMBER FLEA-BEETLE.

Epitrix cucumeris Harr.

For short account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 89–90, 1899.

Exhibit: Adult and figure.

THE PUNCTURED FLEA-BEETLE.

Psylliodes punctulata Mels.

For brief account see Forbes and Hart, 21st Rpt. St. Ent. Ill., p. 124, 1900.

Exhibit: Adult.

THE HORNED SQUASH-BUG.

Anasa armigera Say.

For general accounts see Chittenden, Can. Ent., v. XXX, pp. 239–240, 1898; Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 28–34, 1899.

Exhibit: Eggs, nymph, adult, and figure.

THE COMMON SQUASH-BUG.

Anasa tristis De G.

For general accounts see Chittenden, Circ. 39, Div. Ent., U. S. Dept. Agric., 1899; Bul. 19, n. s., pp. 20–28, 1899.

Exhibit: Eggs, nymph, adult, and figure.

THE SQUASH LADYBIRD.

Epilachna borealis Fab.

For bibliography and life history see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 11–20, 1899.

Exhibit: Larva, pupa, adult, and work.

INSECTS INJURIOUS TO OTHER VEGETABLE PRODUCTS.

INJURING CARROT, CELERY, PARSLEY, AND PARSNIP.

THE CELERY LOOPER.

Plusia simplex Guen.

For general account see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 73–74, 1902.

EXHIBIT: Adult and figure.

THE GREENHOUSE LEAF-TYER.

Phlyctaenia ferrugalis Hübn.

For detailed account (under *P. rubigalis* Guen.) see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 7–26, 1901.

EXHIBIT: Larva, cocoon, adult, and figure.

THE CELERY CATERPILLAR.

Papilio polyxenes Fab.

(Formerly called *P. asterias.*)

For general account see Davis, Bul. 102, Mich. Agric. Expt. Sta., pp. 21-24, 1893.

EXHIBIT: Larva, adult and chrysalis.

THE CARROT RUST-FLY.

Psila rosæ Fab.

For general article see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 26–32, 1902.

EXHIBIT: Adult and figure.

THE CARROT BEETLE.

Ligyrus gibbosus DeG.

For general account see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 32–37, 1902.

EXHIBIT: Adult and figure.

THE PARSNIP WEBWORM.

Depressaria heracliana DeG.

For general accounts see Riley, Insect Life, v. I, pp. 94–98, 1888 Southwick, Insect Life, v. V, pp. 106–109, 1892.

EXHIBIT: Larva, pupa, adult, work, and figure.

THE PARSNIP LEAF-MINER.

Acidia fratria Loew.

(Formerly known as *Trypeta.*)

For short account see Coquillett, Insect Life, v. VII, pp. 383–384, 1895.

EXHIBIT: Adult and figure.

THE PARSLEY ROOT-BORER.

Listronotus latiusculus Boh.

For brief notice see Chittenden, Yearbook, U. S. Dept. Agric., 1902, p. 731.

Exhibit: Adult.

THE LITTLE NEGRO BUG.

Corimelæna pulicaria Germ.

For general account see Davis, Bul. 102, Mich. Agric. Expt. Sta., pp. 13–18, 1893.

Exhibit: Nymph and adult.

DARK-SIDED CUTWORM.

Euxoa messoria.

(Formerly *Carneades.*)

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 290–291, pl. 2, fig. 6, 1885.

Exhibit: Adult and figure.

INJURIOUS TO ONION.

THE WHEAT WIREWORM.

Agriotes mancus Say.

For general account see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 77–78, 1901.

Exhibit: Adult and figure.

TOBACCO THRIPS; ONION THRIPS.

Thrips tabaci Lind.

For short accounts as *T. striatus* see Gillette, Bul. 47, Colo. Agric. Expt. Sta., p. 44, 1898; Howard, Farmers' Bul. 120, U. S. Dept. Agric. pp. 24–25, 1900.

Exhibit: Figure.

THE CORN-STALK MAGGOT.

Chætopsis ænea Wied.

For general account see Howard, Insect Life, v. VII, pp. 352–354, 1895.

Exhibit: Pupa and adult.

THE ONION FLY.

Pegomya cepetorum Meade.

For general account as *Phorbia ceparum* see Slingerland, Bul. 78, Cornell Univ. Agric. Expt. Sta., pp. 495–496, 1894.

Exhibit: Adult.

INJURIOUS TO RHUBARB.

THE RHUBARB CURCULIO.

Lixus concavus Say.

For general account see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 61–69, 1900.

EXHIBIT: Adult and figure.

THE CONVEX FLEA-BEETLE.

Psylliodes convexior Lec.

EXHIBIT: Adult.

INSECTS INJURIOUS TO ORNAMENTAL PLANTS.

For general article on insects affecting ornamental plants see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., 1901.

THE GREENHOUSE LEAF-TYER.

Phlyctænia ferrugalis Hübn.

EXHIBIT: Larva, cocoon, adult, and figure.

THE MORNING-GLORY LEAF-CUTTER.

Loxostege obliteralis Walk.

EXHIBIT: Larva, cocoon, adult, and figure.

THE ROSE BUD-WORM.

Olethreutes nimbatana Clem.

For bibliography and general account see Lintner, 5th Rept. N. Y. St. Ent., pp. 213–215, 1889.

EXHIBIT: Pupa, adult, and figure.

THE VIOLET SAWFLY.

Emphytus canadensis Kby.

EXHIBIT: Adult and figure.

FULLER'S ROSE BEETLE.

Aramigus fulleri Horn.

EXHIBIT: Adult and figure.

THE FICKLE MIDGE.

Sciara inconstans Fitch.

EXHIBIT: Adult and figure.

THE VIOLET "GALL-FLY."

Diplosis violicola Coq.

EXHIBIT: Figure.

THE ROSE CURCULIO.

Rhynchites bicolor Fab.

EXHIBIT: Adult and figure.

CALIFORNIA FLOWER BEETLE.

Hoplia callipyge Lec.

Exhibit: Adult and figure.

THE ROSE LEAF-BEETLE.

Nodonota puncticollis Say.

For general account see Chittenden, Bull. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 60–61, 1897.

Exhibit: Adult.

THE AZALEA BARK SCALE.

Eriococcus azaleæ Comst.

For bibliography, food plants and distribution, see Fernald, Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 72, 1903.

Exhibit: Infested twig.

THE EUONYMUS SCALE.

Chionaspis euonymi Comst.

For bibliography, food-plants, and distribution see Fernald, Coccidae of World, Bul. 88, Mass. Agr. Col., pp. 216, 1903.

Exhibit: Infested twig.

THE ROSE COTTONY SCALE.

Palæococcus rosæ R. & H.

For bibliography, distribution, and food plants, see Fernald, Coccidae of World, Bul. 88 Mass. Agr. Coll., p. 21, 1903. For general account see Riley and Howard, Insect Life, v. III, pp. 93–97, 1890.

Exhibit: Infested twig.

THE BLACK OR BROWN APHIS OF VIOLETS.

Rhopalosiphum violæ Perg.

For original description with short account of injury to violets, see Pergande, Can. Ent. v. XXXII, pp. 29–30, 1900.

Exhibit: Figure.

THE TWO-SPOTTED RED SPIDER.

Tetranychus bimaculatus Harv.

For description and distribution see Banks, Tech. Ser., 8, Div. Ent. U. S. Dept. Agric., pp. 73–74, 1900.

Exhibit: Figure.

THE WHITE ANT.

Leucotermes flavipes Koll.

For general account see Marlatt, Circ. 50, Div. Ent. U. S. Dept. Agric., 1902.

Exhibit: Adult and figure.

INSECTS INJURIOUS TO CRANBERRY.

For treatises on cranberry insects see Smith, Farmers' Bul. 178, U. S. Dept. Agric., 1903; Bul. 90 N. J. Agr. Exp. Sta., 1892; Saunders, Insects Injurious to Fruits, 2d ed., pp. 369–376, 1900.

INJURING THE LEAVES.

LEATHER-COLORED LOCUST.

Acridium alutaceum Harr.

EXHIBIT: Adult.

THE TWO-STRIPED LOCUST.

Melanoplus bivittatus Say.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 363–368, fig. 5, 1897; Riley, Bul. 25, Div. Ent. U. S. Dept. Agric., pp. 31–32, 1891.

EXHIBIT: Adult.

THE ANGULAR-WINGED KATYDID.

Microcentrum retinerve Burm.

EXHIBIT: Adult, eggs and parasitized eggs.

THE CRANBERRY LOOPER.

Xanthotype crocataria Fab.

(Formerly *Angerona.*)

For general account see Lugger, 4th Rpt. State Entom. Minn., pp. 178–179, 1899.

EXHIBIT: Adult.

CHAIN-SPOTTED GEOMETER.

Cingilia catenaria Dru.

(Formerly *Caterva.*)

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 186–187, 1899; Packard, 5th Rept. U. S. Ent. Comm., pp. 783–784, 1890.

EXHIBIT: Larva, pupa, and adult.

CRANBERRY SPANWORM.

Cleora pampinaria Guen.

(Formerly *Boarmia.*)

For general account see Smith, Farmers' Bul. 178, U. S. Dept. Agric., pp. 19–21, 1903.

EXHIBIT: Larva, pupa, and adult.

THE YELLOWHEAD CRANBERRY WORM.

Acleris minuta Rob.

(Formerly *Teras.*)

For general account see Smith, Farmers' Bul. 178, U. S. Dept. Agric., pp. 12–17, 1903.

EXHIBIT: Adult and figure.

THE VINE-WORM; THE FIRE-WORM.

Eudemis vacciniana Pack.

For general account see Smith, Farmers' Bul. 178, U. S. Dept. Agric., pp. 9–12, 1903.

EXHIBIT: Larva, adult, work, and figure.

INJURING THE STEMS.

THE CRANBERRY GIRDLER.

Crambus hortuellus Hübn.

For general account see Smith, Farmers' Bul. 178, U. S. Dept. Agric., pp. 21–24, 1903.

EXHIBIT: Adult and figure.

CRANBERRY SCALE; PUTNAM'S SCALE.

Aspidiotus ancylus Putn.

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 252–253, 1903.

EXHIBIT: Infested twig from fruit tree.

INSECTS INJURING THE FRUIT.

THE CRANBERRY FRUIT WORM.

Mineola vaccinii Riley.

For general account see Smith, Farmers' Bul. 178, U. S. Dept. Agric., pp. 24–26, 1903.

EXHIBIT: Pupa, cocoon, adult, and figure.

THE CRANBERRY KATYDID.

Scudderia texensis Sauss.

For general account see Smith, Farmers' Bul. 178, U. S. Dept. Agric., pp. 26–29, 1903.

EXHIBIT: Adult and figure.

INSECTS INJURIOUS TO STRAWBERRY.

For general articles treating of these insects see Forbes, 13th Rpt. Ill. St. Ent., pp. 60–180, 1884; Saunders, Insects Injurious to Fruits, 2d ed., pp. 321–335, 1900.

INJURING THE ROOTS AND CROWN.

THE STRAWBERRY CROWN-GIRDLER.

Otiorhynchus ovatus Linn.

For brief bibliography and account see Lintner, 10th Rpt. St. Ent. N. Y., pp. 416–419, 1895.

EXHIBIT: Adult.

THE STRAWBERRY CROWN-BORER.

Tyloderma fragariæ Riley.

For detailed accounts see Forbes, 12th Rpt. Ill. St. Ent., pp. 64–75, 1883; 13th Rpt., p. 142, 1884.

Exhibit: Adult, work, and figure.

STRAWBERRY CROWN MOTH.

Ægeria rutilans Hy. Edw.

(Formerly *Sesia.*)

For general account see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 85–90, 1900.

Exhibit: Adult, pupa, and work.

THE SPOTTED STRAWBERRY LEAF-BEETLE.

Typophorus canellus Fab.

For general account see Forbes, 13th Rpt. St. Ent. Ill., pp. 159–163, 1884.

Exhibit: Adult.

INJURING THE ROOTS.

WHITE GRUB; JUNE BEETLE.

Lachnosterna arcuata Sm.

For general account see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 74–76, 1901.

Exhibit: Adult and figure.

THE STRAWBERRY ROOT-BORER.

Graphops nebulosus Lec.

For brief notice see Garman, Bul. 31, Ky. Agric. Exp. Sta., p. 23, 1890.

Exhibit: Adult.

INJURING THE LEAVES.

THE STRAWBERRY FALSE-WORM.

Harpiphorus maculatus Nort.

For general account see Harrington, Insect Life, v. II, pp. 227–228, 1890.

Exhibit: Larva, pupa, adult, work, and figure.

THE STRAWBERRY LEAF-CHAFER.

Diplotaxis frondicola Say.

For brief account see Kridelbaugh, Ann. Rpt. Ia. St. Hort. Soc., 1871, p. 161, 1872.

Exhibit: Adult and work.

THE STRAWBERRY FLEA-BEETLE.

Haltica ignita Illig.

For general account see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 70–78, 1900.

Exhibit: Adult.

THE ROSE LEAF-BEETLE.

Nodonota puncticollis Say.

For general account see Chittenden, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 60–61, 1897.

EXHIBIT: Adult.

THE DUSKY PLANT-BUG.

Calocoris rapidus Say.

For short account see Lugger, 1st Rpt. St. Ent. Minn., p. 65, 1900.

EXHIBIT: Adult.

RASPBERRY LEAF-ROLLER.

Exartema permundana Clem.

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 312–313, 1890.

EXHIBIT: Adult.

THE STRAWBERRY LEAF-ROLLER.

Ancylis comptana Fröhl.

(Formerly *Phoxopteris.*)

For general account see Smith, Bul. 149, N. J. Agric. Expt. Sta., pp. 3–12, 1901.

EXHIBIT: Larva, pupa, adult, and figure.

THE SMEARED DAGGER.

Apatela oblinita S. & A.

For general account see Packard, 5th Rept. U. S. Ent. Comm., pp. 567–568, 1890.

EXHIBIT: Larva, adult and figure.

INJURING THE BUDS AND STEMS.

THE STRAWBERRY WEEVIL.

Anthonomus signatus Say.

(Lays eggs in buds and severs stems.)

For general account see Chittenden, Circ. 21, Div. Ent., U. S. Dept. Agric., 1897.

EXHIBIT: Adult, work, figure, and the parasites *Calyptus tibiator* Cr. and *Catolaccus incertus* Ashm.

INSECTS INJURIOUS TO BLACKBERRY AND RASPBERRY.

For general articles see Webster, Bul. 45, Ohio Agric. Expt. Sta., pp. 151–217, 1893; Saunders, Insects Injurious to Fruits, 2d edit., pp. 303–320, 1900.

INJURING THE ROOTS.

THE RASPBERRY ROOT-BORER.

Bembecia marginata Harr.

For general account see Smith, Spec. Bul. N, N. J. Agric. Expt. Sta., pp. 9–12, 1891.

EXHIBIT: Larva and adult.

INJURING THE STEMS.

BLACKBERRY GALL-MAKER.

Diastrophus turgidus Bass.

(Also called *D. nebulosus* O. S.)

For brief article see Saunders, Insects Injurious to Fruits, 2d ed., pp. 318–319, 1900.

Exhibit: Adult and figure.

RASPBERRY CANE-BORER.

Oberea bimaculata Oliv.

For bibliography and general account see Lintner, 5th Rpt. N. Y. St. Ent., pp. 231–233, 1889.

Exhibit: Adult and work.

THE SNOWY TREE-CRICKET.

Œcanthus niveus De G.

For general account see Lugger; 3d Rpt. St. Ent. Minn., pp. 269–271, 1898.

Exhibit: Adult, work, and figure.

RED-NECKED CANE-BORER.

Agrilus ruficollis Fab.

For general account see Smith, Spec. Bul. N, N. J. Agric. Expt. Sta., pp. 4–8, 1891.

Exhibit: Adult, work, and figure.

INJURING THE LEAVES.

THE RASPBERRY SAWFLY.

Monophadnoides rubi Harris.

For bibliography and general account see Lowe, Bul. 150, N. Y. Agric. Expt. Sta., pp. 249–262, pls. IV–VI, 1898.

Exhibit: Larva, adult, and work.

RASPBERRY LEAF-ROLLER.

Exartema permundana Clem.

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 312–313, 1890.

Exhibit: Adult.

THE FALL WEBWORM.

Hyphantria cunea Dru.

(Feeds on leaves of various trees, shrubs, and vines.)

For general account see Howard, Farmers' Bul. 99, U. S. Dept. Agric., pp. 20–25, 1899.

Exhibit: Adult and figure.

THE SMEARED DAGGER.

Apatela oblinita S. & A.

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 567–568, 1890.

Exhibit: Larva and adult.

STRAWBERRY LEAF-ROLLER.

Ancylis comptana Fröhl.

(Formerly *Phoxopteris.*)

For general account see Smith, Bul. 149, N. J. Agric. Expt. Sta., pp. 3–12, 1901.

Exhibit: Pupa and adult.

THE FOUR-MARKED LEAF-BEETLE.

Cryptocephalus quadrimaculatus Say.

Exhibit: Adult.

THE HOODED PLANT-BUG.

Euthoctha galeator Fab.

For brief notices see Riley and Howard, Insect Life, v. I, p. 54, 1888; p. 366, 1889.

Exhibit: Eggs, nymph, and adult.

INJURING THE FRUIT.

RASPBERRY SPAN-WORM.

Synchlora ærata Fab.

(Formerly called *S. glaucaria.*)

For bibliography and general account see Lintner, 8th Rpt. St. Ent. N. Y., pp. 129–133, 1893.

Exhibit: Pupa, adult, and figure.

THE LITTLE NEGRO BUG.

Corimelæna pulicaria Germ.

For general account see Lintner, 8th Rpt. St. Ent. N. Y., pp. 213–214, 1893.

Exhibit: Adult and figure.

INSECTS INJURIOUS TO CURRANT AND GOOSEBERRY.

For general article on insects affecting currant and gooseberry see Piper and Doane, Bul. 36, Washington Agr. Expt. Sta., 1898.

INJURING THE STEMS.

THE TERRAPIN SCALE.

Eulecanium nigrofasciatum Perg.

(Food plants: Apple, birch, linden, maple, peach, plum, sycamore; formerly a *Lecanium.*)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 191, 1903; Pergande, Bul. 18, n. s., Div. Ent. U. S. Dept. Agr., pp. 26–29, figs. 1898.

Exhibit: Infested twig.

THE NATIVE CURRANT STEM-BORER.

Psenocerus supernotatus Say.

For general account see Lugger, 5th Rept. State Entom. of Minnesota, pp. 121–122, 1899.

EXHIBIT: Adult and work.

CURRANT CLEARWING MOTH; IMPORTED CURRANT-BORER.

Sesia tipuliformis Clerck.

For general account see Lugger, 4th Rpt. State Entom. Minn., pp. 60–64, 1899.

EXHIBIT: Adult and work.

PUTNAM'S SCALE; CRANBERRY SCALE.

Aspidiotus ancylus Putn.

(Food-plants: Apple, apricot, box-elder, cottonwood, cranberry, elm, hemlock, maple, oak, peach, pear, plum, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 252–253, 1903.

EXHIBIT: Infested twig.

THE SAN JOSE SCALE.

Aspidiotus perniciosus Comst.

(Food plants: Almond, apple, apricot, birch, black walnut, black currant, catalpa, chestnut, crab apple, crab grass, cherry, grape, hickory, oak, peach, pear, persimmon, plum, poplar, prune, Rocky Mountain cherry, rose, silver maple, willow, and many other plants. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 271–275, 1903; Howard and Marlatt, Bul. 3, n. s., Div. Ent., U. S. Dept. Agr., 1896. 80 pp.

EXHIBIT: Infested twig.

THE BLACK GOOSEBERRY BORER.

Xylocrius agassizii Lec.

For general accounts see Fletcher, Rept. of Entom. and Bot. for 1898, Can. Dept. Agric., pp. 207–210, 1899; Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 90–92, 1900.

EXHIBIT: Adult and figure.

INJURING THE LEAVES.

GOOSEBERRY SPANWORM.

Cymatophora ribearia Fitch.

For short account see Lugger, 4th Rpt. State Entom. Minn., pp. 184–186, 1899.

EXHIBIT: Eggs, larva, pupa, adult, and figure.

IMPORTED CURRANT WORM.

Pteronus ribesii Scop.

(Formerly known as *Nematus ventricosus.*)

For bibliography and technical description see Marlatt, Tech. Series 3, Div. Entom., U. S. Dept. Agric., pp. 61–63, 1896.

Exhibit: Adult, figure, and an enemy, *Podisus placidus* Uhl.

THE NATIVE CURRANT WORM.

Pristiphora grossulariæ Walsh.

For bibliography see *Gymnonychus appendiculatus* Htg., Marlatt, Tech. Series 3, Div. Entom., U. S. Dept. Agric., p. 124, 1896.

Exhibit: Adult and figure.

THE CRANBERRY LOOPER.

Xanthotype crocataria Fab.

For general account see Lugger, 4th Rpt. State Entom. Minn., pp. 178–179, 1899.

Exhibit: Larva and adult.

POLYGONIA PROGNE Cram.

(Formerly *Grapta.*)

For general account see Packard, 5th Rpt. U. S. Entom. Comm., pp. 241, 1890.

Exhibit: Larva, chrysalis, and adult.

INJURING THE FRUIT.

GOOSEBERRY FRUIT-WORM.

Zophodia grossulariæ Pack.

For general account see Lugger, 4th Rpt. State Entom. Minn., pp. 214–216, 1899.

Exhibit: Pupa and adult.

INSECTS INJURIOUS TO STORED PRODUCTS.

(See also *Calandra oryza*, under Rice.)

THE WOLF MOTH.

Tinea granella Linn.

For general account see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., pp. 31–34, 1897.

Exhibit: Pupa and adult.

MEDITERRANEAN FLOUR MOTH.

Ephestia kuehniella Zell.

For general account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., pp. 8–9, 1897.

Exhibit: Larva, pupa, cocoon, adult, and figure.

DRIED-CURRANT MOTH.

Ephestia cautella Wlk.

For short account (under *E. cahiritella*) see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., pp. 7–9, 1897.

EXHIBIT: Larva, adult, and figure.

THE MEAL SNOUT-MOTH.

Pyralis farinalis Linn.

(Formerly *Asopia.*)

For short account see Chittenden, Farmers' Bul. 45, pp. 10–11, 1897.

EXHIBIT: Larva, pupa, cocoon, and adult.

THE INDIAN-MEAL MOTH.

Plodia interpunctella Hübn.

(Formerly *Ephestia.*)

For general account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., pp. 9–10, 1897.

EXHIBIT: Larva, pupa, adult, work, and figure.

ANGOUMOIS GRAIN-MOTH.

Sitotroga cerealella Oliv.

(Formerly *Gelechia.*)

For general account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., pp. 6–7, 1897.

EXHIBIT: Cocoon, adult, work, and figure.

THE FOREIGN GRAIN-BEETLE.

Cathartus advena Waltl.

For short account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., pp. 17–18, 1897.

EXHIBIT: Adult, work, and figure.

RED OR SQUARE-NECKED GRAIN-BEETLE.

Cathartus gemellatus Duv.

For short account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., p. 17, 1897.

EXHIBIT: Adult and figure.

THE SAW-TOOTHED GRAIN-BETTLE.

Silvanus surinamensis Linn.

For short account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., pp. 16–17, 1897.

EXHIBIT: Adult and figure.

THE MERCHANT GRAIN-BEETLE.

Silvanus mercator Fauv.

For short account see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., p. 12, 1897.

EXHIBIT: Adult.

PHARAXONOTHA KIRSCHII Reitt.

For short notice see Chittenden, Insect Life, v. VII, p. 327, 1895.

EXHIBIT: Adult.

THE FLAT GRAIN-BEETLE.

Læmophlœus pusillus Sch.

For short account see Chittenden, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., p. 129, 1902.

EXHIBIT: Adult.

TYPHŒA FUMATA Linn.

EXHIBIT: Adult and work.

THE BLACK CARPET BEETLE.

Attagenus piceus Oliv.

For general account see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., pp. 15–19, 1897.

EXHIBIT: Adult.

TROGODERMA TARSALE Mels.

For general account see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., pp. 19–21, 1897.

EXHIBIT: Adult.

THE CABINET BEETLE.

Anthrenus verbasci Linn.

(Formerly *A. varius.*)

For short account see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., pp. 22–23, 1897.

EXHIBIT: Adult and work.

THE MEAL SAP-BEETLE.

Carpophilus dimidiatus Fab.

EXHIBIT: Adult.

THE CORN SAP-BEETLE.

Carpophilus pallipennis Say.

EXHIBIT: Adult.

THE CADELLE.

Tenebroides mauritanicus Linn.

(Formerly *Trogosita.*)

For general account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., pp. 18–19, 1897.

EXHIBIT: Larva, adult, work, and figure.

THE DARK MEAL-WORM.

Tenebrio obscurum Fab.

For short account see Chittenden, Farmers' Bul. 45, rev. ed., U. S. Dept. Agric., p. 15, 1897.

EXHIBIT: Larva, pupa, adult, and figure.

25528—No. 47—04——8

THE YELLOW MEAL-WORM.

Tenebrio molitor Linn.

For general account see Chittenden, Farmers' Bul. 45, rev. ed., U. S. Dept. Agric., pp. 14–15, 1897.

Exhibit: Larva, pupa, adult, and figure.

THE WHITE-MARKED SPIDER-BEETLE.

Ptinus fur Linn.

For general account see Chittenden, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., pp. 127–128, 1902.

Exhibit: Adult.

THE BROWN SPIDER-BEETLE.

Ptinus brunneus Dufts.

For short account see Chittenden, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., p. 128, 1902.

Exhibit: Adult.

THE DRUG-STORE BEETLE.

Sitodrepa panicea Linn.

(Listed as *Anobium* in foreign catalogues.)

For general account see Chittenden, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., pp. 124–126, 1897.

Exhibit: Adult, work and figure.

THE CIGARETTE BEETLE.

Lasioderma testaceum Dufts.

(Formerly *L. serricorne*.)

For general account see Chittenden, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., pp. 126–127, 1897.

Exhibit: Adult and figure.

THE LARGER GRAIN-BORER.

Dinoderus truncatus Horn.

For short account see Chittenden, Insect Life, v. VII, p. 327, 1895.

Exhibit: Adult.

THE RUST-RED FLOUR-BEETLE.

Tribolium ferrugineum Fab.

For general account see Chittenden, Farmers' Bul. 45, rev. ed., U. S. Dept. Agric., pp. 12–13, 1897.

Exhibit: Adult.

THE CONFUSED FLOUR-BEETLE.

Tribolium confusum Duv.

For general account see Chittenden, Bul. 4, n. s., rev. ed., Div. Ent. U. S. Dept. Agric., pp. 113–115, 1902.

Exhibit: Adult and figure.

THE SLENDER-HORNED FLOUR-BEETLE.

Echocerus maxillosus Fab.

For short account see Chittenden, Farmers' Bul. 45, rev. ed., U. S. Dept. Agric., p. 13, 1897.

EXHIBIT: Adult and figure.

THE BROAD-HORNED FLOUR-BEETLE.

Echocerus cornutus Fab.

For short account see Chittenden, Farmers' Bul. 45, rev. ed., U. S. Dept. Agric., p. 13, 1897.

EXHIBIT: Adult and figure.

THE SMALL-EYED FLOUR-BEETLE.

Palorus ratzeburgi Wissm.

For short account see Chittenden, Farmers' Bul. 45., rev. ed., U. S. Dept. Agric., pp. 13–14, 1897.

EXHIBIT: Adult and figure.

THE DEPRESSED FLOUR-BEETLE.

Palorus subdepressus Woll.

EXHIBIT: Adult.

ALPHITOBIUS PICEUS Ol.

EXHIBIT: Adult.

BROAD-NOSED GRAIN WEEVIL.

Caulophilus latinasus Say.

For general account see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., pp. 13–14, 1897.

EXHIBIT: Adult.

THE GRANARY WEEVIL.

Calandra granaria Linn.

(For the most important enemy of stored grain, see *C. oryza*, under "Rice.")

For short account, see Chittenden, Farmers' Bul. 45, rev. ed., U. S. Dept. Agric., pp. 4–5, 1897.

EXHIBIT: Adult, work and figure.

BRACHYTARSUS ALTERNATUS Say.

For life history, notes, and general accounts, see Quaintance, Ent. News, pp. 1–3, plate, 1897.

EXHIBIT: Adult and figure.

HOUSEHOLD INSECTS.

For general account of household insects see Howard, Marlatt, and Chittenden, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., 1902. Contains articles on all the insects represented in the exhibit.

THE HOUSE CENTIPEDE.

Scutigera forceps Raf.

(While this animal is not an insect, but belongs to the class Myriapoda, it is so regularly associated with the insects that it may appropriately be presented with them. It feeds on flies, moths, roaches, etc.)

For general article see Marlatt, Circ. 48, Div. Ent., U. S. Dept. Agric., 1902.

EXHIBIT: Figure.

THE SILVER FISH.

Lepisma domestica Pack.

For general article see Marlatt, Circ. 49, Div. Ent., U. S. Dept. Agric., 1902.

EXHIBIT: Figure.

THE BOOK-LOUSE.

Troctes divinatoria Müll.

(Formerly *Psocus* and *Atropos.*)

EXHIBIT: Figure.

THE WHITE ANT.

Leucotermes flavipes Koll.

(Formerly *Termes.*)

For general account see Marlatt, Circ. 50, Div. Ent., U. S. Dept. Agric., 1902.

EXHIBIT: Adult and figure.

THE AMERICAN COCKROACH.

Periplaneta americana Linn.

For general article see Marlatt, Circ. 51, Div. Ent., U. S. Dept. Agric., pp. 1–8, 1902.

EXHIBIT: Adult and figure.

THE BLACK BEETLE.

Blatta orientalis Linn.

For general article see Marlatt, Circ. 51, Div. Ent., U. S. Dept. Agric., pp. 9–10, 1902.

EXHIBIT: Adult and figure.

THE CROTON BUG.

Blatella germanica Linn.

(Formerly *Ectobia.*)

For general article see Marlatt, Circ. 51, Div. Ent., U. S. Dept. Agric., pp. 10–11, 1902.

EXHIBIT: Adult.

THE HOUSE CRICKET.

Gryllus domesticus Linn.

EXHIBIT: Adult.

THE CASE-MAKING CLOTHES MOTH.

Tinea pellionella Linn.

For general article see Marlatt, Circ. 36, Div. Ent., U. S. Dept. Agric., pp. 1–4, 1898.

Exhibit: Adult and figure.

THE TAPESTRY MOTH.

Trichophaga tapetzella Linn.

(Formerly *Tinea.*)

For general article see Marlatt, Circ. 36, Div. Ent., U. S. Dept. Agric., p. 5, 1898.

Exhibit: Figure.

THE WEBBING CLOTHES MOTH.

Tineola biselliella Hum.

(Formerly *Tinea.*)

For general article see Marlatt, Circ. 36, Div. Ent., U. S. Dept. Agric., pp. 4–5, 1898.

Exhibit: Adult and figure.

THE RED-LEGGED HAM BEETLE.

Necrobia rufipes DeG.

(Formerly *Corynetes.*)

Exhibit: Adult and figure.

THE LARDER BEETLE.

Dermestes lardarius Linn.

Exhibit: Adult and figure.

THE CARPET BEETLE OR "BUFFALO MOTH."

Anthrenus scrophulariæ Linn.

For general article see Howard, Circ. 5, Div. Ent., U. S. Dept. Agric., 1894.

Exhibit: Adult and figure.

THE CHEESE OR HAM SKIPPER.

Piophila casei Linn.

Exhibit: Adult.

THE FRUIT OR VINEGAR FLY

Drosophila ampelophila Loew.

For general accounts see Howard, Bul. 4, n. s., Div. Ent., U. S. Dept. Agric., pp. 109–111, 1896; Proc. Wash. Acad. Sci., v. II, pp. 589–590, pl. 31, fig. 2, 1900.

Exhibit: Adult and figure.

THE LITTLE RED ANT.

Monomorium pharaonis Linn.

For general article see Marlatt, Circ. 34, Div. Ent., U. S. Dept., Agric., pp. 1–2, 1898. For bibliography and general account see Lintner, 11th Rept. N. Y. St. Entom., pp. 109–114, 1896.

Exhibit: Adult and figure.

INSECTS WHICH MAY SPREAD DISEASE.

General articles: Howard, Farmers' Bulletin 155, U. S. Dept. Agric., 1902; also Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., pp. 39–45, 1901.

THE YELLOW-FEVER MOSQUITO.

Stegomyia fasciata Fab.

(Is the intermediate host for the parasite of yellow fever. Formerly *Culex.*)

EXHIBIT: Adult and figure.

THE MALARIA MOSQUITO.

Anopheles maculipennis Meig.

(The most important of the mosquitoes transmitting malaria. Formerly *A. quadrimaculatus.*)

EXHIBIT: Adult and figure.

THE GREEN BOTTLE FLY.

Lucilia cæsar Linn.

For general article see Howard, Circ. 35, Div. Ent., U. S. Dept. Agric., 1898.

EXHIBIT: Adult and figure.

THE STABLE FLY.

Stomoxys calcitrans Linn.

For special article see Howard, Proc. Wash. Acad. Sci., v. II, pp. 577–579, fig. 27, 1900.

EXHIBIT: Adult and figure.

THE HIPPELATES FLY.

Hippelates flavipes Loew.

(Facilitates the spread of the disease known as "pink-eye.")

EXHIBIT: Adult and figure.

THE BROWN DUNG FLY.

Scatophaga furcata Say.

EXHIBIT: Adult and figure.

THE SHINING EXCREMENT FLY.

Morellia micans Macq.

EXHIBIT: Adult and figure.

THE LITTLE HOUSE FLY.

Homalomyia brevis Rond.

EXHIBIT: Adult and figure.

THE FRUIT OR VINEGAR FLY.

Drosophila ampelophila Loew.

EXHIBIT: Adult and figure.

THE SCREW-WORM FLY.

Chrysomyia macellaria Fab.

(Formerly *Compsomyia.*)

For special article see Howard, Proc. Wash. Acad. Sci., v. II, p. 562, 1900.

EXHIBIT: Adult and figure.

THE CATTLE TICK.

Boophilus annulatus Say.

(Very common on cattle below the Texas fever line, and known to be responsible for transmission of Texas fever among cattle.)

EXHIBIT: Eggs, adult, and figure.

INSECTS WHICH DIRECTLY INJURE OR ANNOY HUMAN BEINGS.

THE HOUSE FLY.

Musca domestica Linn.

For general article see Howard, Circ. 35, Div. Ent., U. S. Dept. Agric., 1898.

EXHIBIT: Adult and figure.

THE SOUTHERN BUFFALO GNAT.

Simulium pecuarum Riley.

For general article and full life history see Osborn, Bul. 5, n. s., Div. Ent., U. S. Dept. Agric., pp. 41–52, 1896.

EXHIBIT: Adult and figure.

THE CAT AND DOG FLEA.

Ctenocephalus canis Curtis

(Formerly called *Pulex serraticeps* Gerv.)

For general account see Howard and Marlatt, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., pp. 24–31, 1902. For full bibliography see Baker, Proc. U. S. N. M., v. XXVII, p. 438, 1904.

EXHIBIT: Figure.

THE BLOOD-SUCKING CONE-NOSE.

Conorhinus sanguisuga Lec.

For general article see Howard and Marlatt, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., pp. 38–42, 1902.

EXHIBIT: Egg, nymph, adult, and figure.

THE HOUSE MOSQUITO.

Culex pipiens Linn.

For general article and life history see Howard, Bul. 25, n. s., Div. Ent., U. S. Dept. Agric., pp. 22–28, 1900. Treated as *C. pungens* Wied.

EXHIBIT: Adult and figure.

THE BEDBUG.

Klinophilos lectularia Linn.

(Formerly *Acanthia* and *Cimex*.)

For general article see Marlatt, Circ. 47, Div. Ent., U. S. Dept. Agric., 1902.

EXHIBIT: Nymph, adult, and figure.

THE BLACK BEETLE.

Blatta orientalis Linn.

For general article see Marlatt, Circ. 51, Div. Ent., U. S. Dept. Agric., pp. 9–10, 1902.

EXHIBIT: Adult and figure.

THE RED BUG.

Leptus irritans Riley.

For general article see H. Osborn, Bul. 5, n. s., Div. Ent., U. S. Dept Agric., pp. 251–253, 1896.

EXHIBIT: Figure.

THE HEAD LOUSE.

Pediculus capitis DeG.

For general article see H. Osborn, Bul. 5, n. s., Div. Ent., U. S. Dept. Agric., pp. 166–167, 1896.

EXHIBIT: Figure.

THE BODY LOUSE.

Pediculus vestimenti Leach.

For general article see H. Osborn, Bul. 5, n. s., Div. Ent., U. S. Dept. Agric., pp. 167–168, 1896.

EXHIBIT: Figure.

THE CRAB LOUSE.

Phthirius inguinalis Leach.

For general article see H. Osborn, Bul. 5, n. s., Div. Ent., U. S. Dept. Agric., pp. 165–166, 1896.

EXHIBIT: Eggs, adult, and figure.

INSECTS INJURIOUS TO DOMESTIC ANIMALS.

For general account with illustrations of many of the insects affecting domestic animals see Osborn, Bull. 5, n. s., Div. Ent., U. S. Dept. Agric., pp. 1–302, 1896.

THE SOUTHERN BUFFALO GNAT.

Simulium pecuarum Riley.

EXHIBIT: Adult and figure.

THE TURKEY GNAT.

Simulium meridionale Riley.

EXHIBIT: Pupa, adult, and figure.

AMERICAN GAD-FLY.

Tabanus americanus Forst.

EXHIBIT: Adult.

THE GRAY-STRIPED GREEN-HEAD.

Tabanus lineola Fab.

EXHIBIT: Adult and figure.

THE BLACK GAD-FLY.

Tabanus atratus Linn.

EXHIBIT: Larva, adult, figure, and figure of parasite *Phanurus tabanivorus* Ashm.

THE GREENHEAD.

Tabanus costalis Wied.

EXHIBIT: Adult.

TABANUS EXUL C. S.

EXHIBIT: Adult.

TABANUS PUNCTIFER O. S.

EXHIBIT: Adult.

TABANUS CINCTUS Fab.

EXHIBIT: Adult.

MEXICAN BOT-FLY.

Tabanus mexicanus Linn.

EXHIBIT: Adult.

THE BLACK-STRIPED GAD-FLY.

Tabanus nigrovittatus Macq.

EXHIBIT: Adult.

THE BLACK-STRIPED EAR-FLY

Chrysops vittatus Wied.

EXHIBIT: Adult and figure.

CHRYSOPS ATROPOS O. S.

EXHIBIT: Adult.

CHRYSOPS HILARIS O. S.

EXHIBIT: Adult.

THE STABLE FLY.

Stomoxys calcitrans Linn.

For special article see Howard, Proc. Wash. Acad. Sci., v. II, pp. 577–579, fig. 27, 1900.

EXHIBIT: Adult and figure.

THE HORSE BOT-FLY.

Gastrophilus equi Fab.

EXHIBIT: Eggs, larva, puparia, adult, and figure.

THE "CHIN" FLY.

Gastrophilus nasalis Linn.

EXHIBIT: Adult.

THE WARBLE FLY.

Hypoderma bovis DeG.

(A European species.)

Exhibit: Eggs, adult and figure.

THE OX BOT; OX WARBLE.

Hypoderma lineata Vill.

Exhibit: Larva, adult, and figure.

THE SHEEP BOT-FLY; HEAD MAGGOT.

Œstrus ovis Linn.

Exhibit: Larva, puparia, adult, and figure.

THE HORN FLY.

Hæmatobia serrata R-D.

For special article see Riley and Howard, Insect Life, v. II, pp. 93–103.

Exhibit: Puparium, adult, and figure.

THE SHEEP TICK.

Melophagus ovinus Linn.

Exhibit: Adult and figure.

THE SCREW-WORM FLY.

Chrysomyia macellaria Fab.

(Formerly *Compsomyia.*)

For special article see Howard, Proc. Washington Acad. Sci., v. II, p. 562, 1900.

Exhibit: Adult and figure.

THE CAT AND DOG FLEA.

Ctenocephalus canis Curtis.

(Formerly called *Pulex serraticeps* Gerv.)

For full bibliography see Baker, Proc. U. S. N. M., v. XXVII, p. 438, 1904.

Exhibit: Figure.

THE SUCKING HORSE-LOUSE.

Hæmatopinus asini Linn.

Exhibit: Figure.

THE SHORT-NOSED OX-LOUSE.

Hæmatopinus eurysternus Nitsch.

Exhibit: Figure.

THE LONG-NOSED OX-LOUSE.

Hæmatopinus vituli Linn.

Exhibit: Adult and figure.

THE CATTLE LOUSE.

Trichodectes scalaris Nitsch.

EXHIBIT: Adult and figure.

THE SHEEP LOUSE.

Trichodectes sphærocephalus Nitsch.

EXHIBIT: Adult and figure.

TICKS INJURIOUS TO DOMESTIC ANIMALS.

For general account, bibliography, and illustrations see Salmon and Stiles, Cattle Ticks, 17th Ann. Rept. B. A. I., U. S. Dept. Agric., pp. 380–491, 1900.

THE CATTLE TICK.

Boophilus annulatus Say.

(Very common on cattle below the Texas fever line and known to be responsible for transmission of Texas fever among cattle.)

EXHIBIT: Adult and figure.

THE SOUTHERN CHICKEN TICK.

Argas miniatus Koch.

(Also reported on cattle.)

EXHIBIT: Adult and figure.

THE SPINOSE EAR TICK.

Ornithodoros megnini Dugés.

(On man, cattle, horses, dogs, sheep, etc.)

EXHIBIT: Adult and figure.

THE AMERICAN DOG TICK.

Dermacentor electus Koch.

(On man, cattle, dogs, and horses.)

EXHIBIT: Adult and figure.

THE NETTED TICK.

Dermacentor reticulatus Fab.

(On man, cattle, horses, and sheep.)

EXHIBIT: Adult and figure.

THE LONE-STAR TICK.

Amblyomma americanum Linn.

(Not uncommon on cattle and man.)

EXHIBIT: Adult and figure.

THE CASTOR-BEAN TICK.

Ixodes ricinus Linn.

(On man, cats, dogs, cattle, goats, horses, rabbits, etc.)

EXHIBIT: Adult and figure.

SPECIAL EXHIBIT OF MODELS OF INSECTS AND OF PLANTS AND INSECTS AFFECTING THEM.

YELLOW FEVER MOSQUITO.

Stegomyia fasciata Fab.

Enlarged model. This mosquito transmits yellow fever and it is now the opinion of the best-posted experts that only through its bite can one contract this disease.

MALARIA MOSQUITO.

Anopheles maculipennis Meig.

Enlarged model. This and other species of Anopheles are the only known transmitters of human malaria. The parasitic organism causing malaria inhabits the red-blood cells of human beings. It is taken with the blood into the stomach of the mosquito. There it undergoes a sexual development, reproduces, and the offspring are carried with the mosquito poison into the circulation of healthy human beings.

SALT MARSH MOSQUITO.

Culex sollicitans Walk.

Enlarged model. This mosquito is not known to carry any disease, but is very annoying at many seaside resorts.

THE HOUSEFLY.

Musca domestica Linn.

Enlarged model. The housefly is not merely a nuisance, but also acts as a carrier of many diseases, especially in the United States of typhoid fever.

HESSIAN FLY.

Cecidomyia destructor Say.

One of the most injurious enemies of wheat in the Northern and Central States. The larva attacks the stem. The average yearly damage to the wheat industry in this country from this insect is $60,000,000.

Enlarged models are exhibited of the adult fly, and of an infested stalk of wheat showing the so-called "flaxseed" stage of the insect.

Two natural-size models are exhibited, one representing a healthy, unaffected young wheat plant to contrast with the same attacked by the Hessian fly; the other illustrating the effects of the attacks of the Hessian fly.

GRAPE-VINE TRUMPET-GALL.

Lasioptera viticola O. S.

Model in wax of the abnormal growths caused by the sting of a minute dipterous insect not infrequently observed on the leaves of the grape.

GRAPE-VINE TOMATO-GALL.

Lasioptera vitis O. S.

Model in wax of the abnormal growths on terminal twigs of the grape, caused by the sting of a little gnat.

GRAPE-VINE PHYLLOXERA-GALL.

Phylloxera vastatrix Planch.

Model in wax of the galls produced by the leaf form of the grape Phylloxera, showing their characteristic appearance and disposition on the leaf.

SOCIAL GRAPE CATERPILLAR.

Harrisina americana Harr.

Twigs of grape-vine modeled in wax, showing the characteristic appearance and work of the larvæ and their method of feeding in uniform rows on the leaf.

THE GRAPE-SEED WEEVIL.

Craponius inæqualis Say.

A bunch of grapes, showing damage to the berries by the larvæ of this insect; also punctures made by the female beetle in oviposition.

THE SILKWORM.

Bombyx (*Sericaria*) *mori* Linn.

Enlarged model of the larva, showing its complete anatomy; the muscles, nerves, trachæ, viscera, the silk apparatus in its whole extent, the silk-secreting gland, and the gland discovered by Auzoux, which secretes a liquid, the use of which is most probably to convert the silky matter into insoluble threads. In one of the prolegs may be seen the muscles which move the claws and sucking disks which enable the animal to walk with its true feet in the air.

Enlarged models of the moths, male and female. In each model is shown the atrophy of the digestive tube and the development of the marvelous organs by which the species is perpetuated. (After Auzoux.)

HOP PLANT-LOUSE.

Phorodon humuli Schr.

Unaffected Hop Plant.—A spray of hops, modeled in wax, representing the plant as it appears in vigorous growing condition, and free from the attacks of its principal enemy, the hop plant-louse to contrast the stronger foliage and the more abundant and larger hops produced by plants from which the hop louse has been eradicated by the use of proper remedies.

Affected Hop Plant.—A spray of hops modeled in wax, representing the vine as it appears when attacked by the hop plant-louse, showing the blackening and discoloration of the leaves and the small and inferior hops which are also discolored and otherwise unsuitable for market.

Winter Eggs.—Enlarged model of the winter eggs, which are attached by the sexual female to the terminal twigs of the plum, in crevices around the buds.

Stem-Mother.—The stout female plant-louse shown in this enlarged model hatches from the winter egg and is characterized by shorter legs and honey-tubes. It gives birth without the intervention of the male to living young, of which three generations are produced on the plum trees, the last being winged and migrating to the hop.

Winged Migrant.—This enlarged model represents the first winged generation, the third produced on the plum. It instinctively flies to the hop plant and is the progenitor of from five to twelve wingless generations of virgin females, which infest the hop plants until autumn, and are the sole forms which depredate on the hop. In autumn the last generation again produces winged females which fly to the plum trees.

Hop-Affecting Stage.—This enlarged model represents the structure and appearance of the five to twelve wingless generations of virgin females which people the hop plant until autumn. These are the progeny of the *winged migrants* and are the sole forms which injure the hop.

Return Migrant.—This enlarged model represents the last generation produced on the hop, the winged migrant form which in September returns again to the plum and gives birth to three or more young, which are the true sexual females, the first perfect sexual females produced in the cycle up to this point.

Pupa of Return Migrant.—This model represents the pupal stage of the *return migrant*. The striking features are the wing pads, which with another molt become the ample flight organs seen in the model of the adult.

True Sexual Female.—This enlarged model represents the generation born of the return migrant, which never acquire wings and never leave the plum tree. Maturing in a few days, according to the temperature, they are fertilized by the true winged males which have been subsequently developed on the hops, and have come from the hop fields to the plum. Shortly after fertilization the winter eggs, like those with which the cycle started, are deposited.

Young Sexual Female.—This enlarged model represents the newly hatched stage of the only perfectly developed sexual female produced in the life cycle of this insect.

Winged Male.—This enlarged model represents the first and only male generation produced in the life cycle of the hop-plant louse. This is developed in the autumn, and flies from the hop to the plum and fertilizes the true sexual females.

CHINCH BUG.

Blissus leucopterus Say.

The Eggs.—This enlarged model represents the form of the egg and the terminal cap. The eggs are three-hundredths of an inch long, the top being squarely docked and surrounded by four round tubercles near the center. Color from pale whitish to amber.

First Larval Stage.—This stage, represented enlarged in this model, differs from the adult in being more elongate and in having two-jointed tarsi, the head broader and more rounded and the joints of the body subequal. The prevailing color of the whole body is red.

Second Larval Stage.—After the first molt the form represented in this enlarged model is assumed. The red becomes a brilliant vermilion and contrasts with the pale band across the middle of the body, while the head and prothorax are dusky and coriaceous. Two broad marks appear on the mesothorax and the second, fourth, and fifth abdominal sutures, and one at the tip of the abdomen.

Pupa.—The pupa shown in this enlarged model approaches still more nearly the form of the adult, and is not unlike the last larval stage except in being darker and in the appearance of wing-pads, which extend almost across the pale basal abdominal joints.

The Imago.—The mature insect which is represented enlarged in this model is elongate, blackish, and with numerous hairs, or pubescense. Its length is about three-twentieths of an inch. The outer wings are whitish, with a strong distinctive black spot.

THE SAN JOSE SCALE.

Aspidiotus perniciosus Comst.

Ten enlarged models are exhibited illustrating the life cycle of this pest, which has caused more damage to the fruit industry and been the object of more legislation than any other insect. Its small size and inconspicuous appearance often leave it undetected until the infested trees are beyond recovery. The scale may be killed by fumigation or spraying.

Enlarged models are exhibited of the *first* and *second larval stages*, of the *young crawling larva*, *nearly full-grown larva*, *male pro-pupa*, *male pupa*, *adult male*, *adult female*, and of the *half-grown scale*, *full-grown male scale*, and *full-grown female scale*.

THE ASIATIC LADY-BIRD.

Chilocorus similis Rossi.

Two enlarged models are exhibited illustrating the adult and the larva of this insect, which was introduced by the U. S. Department of Agriculture from China, where it is the important agent in keeping the San José scale in check.

THE CODLING MOTH.

Carpocapsa pomonella Linn.

Four enlarged models illustrating the life history of this insect which is the cause of the "wormy apples." The damage from it in this country is estimated at $11,000,000 annually.

Models are exhibited of the *larva* and of the *adult moth;* and also an enlarged section of a *piece of bark*, cut so as to show a cocoon and pupa of the codling moth beneath it, and an enlarged section of "wormy" apple showing egg, young, and mature larva and their work.

THE MEXICAN COTTON BOLL WEEVIL.

Anthonomus grandis Boh.

Enlarged model. This insect is a native of Cuba and Mexico; upwards of ten years ago the weevils crossed the Rio Grande near Brownsville and have now spread over nearly the entire cotton belt of Texas. Its rapid extension, great destructiveness, and the unusual difficulties in the way of its control have caused grave fears for the future of the cotton industry in the United States. The Federal Government has this year appropriated $250,000 for combating this insect.

THE HONEY BEE.

Apis mellifera Linn.

Enlarged models, reproducing the insect in six different forms—queen, male, wax-worker, worker, bee with propolis, and the bee with pollen. In these are shown the external and internal characters which distinguish each type. Also a model of a comb in the same proportion, in which are seen the cells for honey, for pollen, and for the eggs to produce queens, drones, and workers, with eggs, larvæ, and pupæ in different stages of development. (After Auzoux.)

THE EUROPEAN COCKCHAFER.

Melolontha vulgaris Fab.

Model of the perfect insect enlarged twelve times, showing the muscles, nerves, trachea, and viscera, each model separable into as many pieces as there are organs. More than 600 detailed objects are shown, each indicated by a corresponding number.

FLUTED SCALE.

Icerya purchasi Mask.

Model in wax of a twig of orange infested with the fluted scale (*Icerya purchasi*) copied directly from nature, the actual scales being transferred to the model plant. Illustrates the characteristic appearance of the infested plant.

Model of Noninfested Orange.—The model in wax contrasts with the one representing the characteristic appearance of infested plant.

Illustrations from the publications of the Division of Entomology, representing the different stages of the fluted scale and its principal enemies.

AUSTRALIAN LADYBIRD.

Novius (*Vedalia*) *cardinalis* Muls.

(Principal enemy of the fluted scale [*Icerya purchasi*].)

Enlarged model of the adult of this insect, the introduction of which from Australia has effected what was impossible by any other means—the practical annihilation of the fluted scale in California.

Enlarged models showing structure and characteristic appearance of the larva and pupa.

IMPORTED CURRANT WORM.

Pteronus ventricosus Klug.

This wax model of a currant branch illustrates the work of the imported currant worm. For extended exhibit of the insects affecting the currant see regular economic cases.

PLUM CURCULIO.

Conotrachelus nenuphar Hbst.

The work of the plum curculio on the fruit of the plum, apple, pear, cherry, and peach is illustrated by models. For full details as to the work of this insect see exhibit in regular economic series.

Young apples and pears, a twig of cherry and a branch of peach with ripening fruit, and twigs of plum with green and ripening fruit, illustrating the effects of punctures by the female curculio, are shown.

THE "KISSING BUG."

Reduvius personatus Linn.

Enlarged model of one of the group of true bugs, generally known as "assassin bugs," which of late years have acquired a certain newspaper notoriety through their supposed preference for the human lips.

They feed on other insects, which they pierce with their strong beaks; some species are frequently found in houses, attracted by light, and they may, if they believe themselves in danger, accidentally or in defense, pierce the human skin with their beaks, causing a painful wound, and often blood poisoning through the introduction of the germs of putrefaction.

ORANGE RUST-MITE.

Eriophyes (*Phytoptus*) *oleivorus* Ashm.

Wax models of oranges, showing work of the orange rust-mite.

THE PARASITE CAUSING MALARIA (ÆSTIVO-AUTUMNAL FEVER).

Plasmodium malariæ.

Twenty-nine enlarged models, illustrating the life history of this parasite in the blood of man and in the mosquito (*Anopheles*).

The models exhibited show: Development of spores in the blood of

man; development of "crescent" in the blood of man; development of "gamete" in stomach of mosquito; development and fertilization of "zygote" in stomach of mosquito; development of "zygote" in stomach wall of mosquito; "zygote" filled with "blasts" and ready to burst; free endospores, free blasts, and spermatozoa.

RIKER MOUNTS SHOWING LIFE HISTORIES OF INSECTS.

LEPIDOPTERA.

Eight-spotted Forester.
Alypia octo-maculata Fab.

Grapevine Hog Caterpillar.
Ampelophaga myron Cram.

Stigma Moth.
Anisota stigma Fab.

Spring Maple Worm.
Anisota rubicunda Fab.

Maple Dagger Moth.
Apatela americana Harr.

Io Moth.
Automeris io Fab.

Calleta Silkmoth.
Callosamia calleta Westw.

Prometheus Silkmoth.
Callosamia promethea Dru.

Chainspotted Geometer.
Cingilia catenaria Cram.

Hickory Horned Devil.
Citheronia regalis Fab.

Cranberry Spanworm.
Cleora pampinaria Guen.

Yellow-Necked Caterpillar.
Datana ministra Dru.

Roller Worm.
Eudamus proteus Linn.

Brown-Tail Moth.
Euproctis chrysorrhœa Linn.

Large Beautiful Woodnymph.
Euthisanotia grata Fab.

Mourning Cloak.
Euvanessa antiopa Linn.

Oak Tussock Caterpillar.
Halisidota maculata Harr.

Social Grape Caterpillar.
Harrisina americana Guér.

White-Marked Tussock Moth.
Hemerocampa leucostigma S. & A.

Lunate Looper.
Homoptera lunata Dru.

Fall Webworm.
Hyphantria cunea Dru.

Fall Army Worm.
Laphygma frugiperda S. & A.

The Army Worm.
Heliophila (Leucania) unipuncta Haw.

Apple Tent-Caterpillar.
Malacosoma americana Harr.

The Baltimore.
Euphydryas phæton Dru.

Parsnip Butterfly.
Papilio polyxenes Fab.

Spice-Bush Swallowtail.
Papilio troilus Linn.

Cynthia Silkmoth.
Philosamia cynthia Dru.

Semicolon Butterfly.
Polygonia interrogationis Fab.

Gipsy Moth.
Porthetria dispar Linn.

Tobacco Worm.
Phlegethontius quinquemaculata Haw.

Jorulla Silkmoth.
Rothschildia jorulla Westw.

Orizaba Silkmoth.
Rothschildia orizaba Westw.

Polyphemus Silkmoth.
Telea polyphemus Cram.

The Bagworm.
Thyridopteryx ephemeræformis Steph.

Luna Moth.
Tropæa luna Linn.

ORTHOPTERA.

Walking Stick.

Anisomorpha buprestoides Stôl.

Katydid.

Microcentrum retinerve Burm.

The Soothsayers or Rearhorses.

(Chinese and American Species.)

Paratenodera sinensis Sauss. and *Stagmomantis carolina* Burm.

COLEOPTERA.

Asparagus Beetles.

Crioceris asparagi Linn. and *C. duodecimpunctata* Linn.

Elm Leaf Beetle.

Galerucella luteola Müll.

HEMIPTERA.

Seventeen-Year Locust.

Tibicen septendecim Linn.

SILKMOTHS.

THE JAPANESE SILKMOTH.

Antheræa yamamai Guér.

Exhibit: Cocoon, adult, and figure.

THE IO MOTH.

Automeris io Fab.

Exhibit: Larva, cocoon, and adult.

THE ANGULATED SILKMOTH.

Callosamia angulifera Wlk.

Exhibit: Adult.

THE PROMETHEUS SILKMOTH.

Callosamia promethea Dru.

Exhibit: Larva, cocoon, and adult.

THE CYNTHIA SILKMOTH.

Philosamia cynthia Dru.

Exhibit: Adult.

THE GIANT INDIAN SILKWORM.

Attacus atlas Linn.

Exhibit: Adult.

THE CECROPIA SILKMOTH.

Samia cecropia Linn.

Exhibit: Cocoon, adult, and figure.

THE COLUMBIA SILKMOTH.

Samia columbia Sm.

Exhibit: Cocoon and adult.

THE PACIFIC-COAST SILKMOTH.

Samia rubra Behr.

EXHIBIT: Larva and adult.

THE POLYPHEMUS SILKMOTH.

Telea polyphemus Linn.

EXHIBIT: Cocoon, adult, and figure.

THE LUNA SILKMOTH.

Tropæa luna Linn.

EXHIBIT: Larva, cocoon, and adult.

MISCELLANEOUS EXHIBITS.

SILKWORMS.

The rearing of silkworms will be conducted on a small scale throughout the summer. Eggs will be kept in cold storage, so that all stages, from the egg to the full-grown larva spinning its cocoon, may be seen at any time during the season.

LIVING INSECTS.

By means of aquaria, vivaria, and other forms of insect cages living insects will be on exhibit, feeding on their natural food plants and undergoing their usual transformations.

Some of the more important economic species injuring cotton and apple will be reared on growing specimens of these plants. In the smaller aquaria may be seem stages of some of the species of mosquitoes frequenting St. Louis and vicinity.

There will also be exhibited one box illustrating the methods of mounting insects for shipment and for permanent preservation in collections; also numerous photographs showing spraying machinery, reeling of silk from cocoons, silk machinery, etc.

INDEX TO SYSTEMATIC NAMES.

Page.

abbotii (Oiketicus) 45
abbotii (Sphecodina) 39
abbreviatus 91
abdominalis (Coccinella) 18
abdominalis (Holcocephala) 48
Acanthia=Klinophilos 120
Achatodes 53
achemon 39
Acidia 100
Acleris 23, 104
acræa 45, 52, 58, 85, 89
Acridium 44, 104
Acronycta=Apatela 71, 107, 108
Adalia 25, 65
adonidis 90
advena 112
Ægeria 106
Ægeria, see Melittia 98
æmula 55
ænea 55, 101
æqualis 51, 63
ærata 109
æsculi 15
affinis 7
Agallia 78
agassizii 110
agitator 43
Agonoderus 49
Agrilus 31, 108
Agriotes 50, 101
Agromyza 96
Agrotis 53, 81, 88
Alabama 42
albida (Syneta) 26
albida (Macrobasis) 93
albilinea 62
albionica 90
albitarsis 28
Alctia=Alabama 42
aletiæ (Frontina) 28, 48
Aleyrodes 10, 19, 67
Allorhina 26
Alphitobius 115
Alsophila 24, 36
alternatus 115
alutaceum 104
Alypia 40, 130
ambigua 18
Amblyomma 123
americana (Apatela) 130
americana (Harrisina) 40, 125, 130
americana (Malacosoma) 24, 35, 130
americana (Meromyza) 60, 65
americana (Periplaneta) 116
americanum (Amblyomma) 123

Page

americanus (Schistocerca) 43, 55, 61
americanus (Syrphus) 63
americanus (Tabanus) 121
Ammophila 49
Ampelophaga 39, 130
ampelophila 117, 118
Amphicerus 37, 38
Amphisa=Coelostathma 69
Anabrus 62
Anaphora 69
Anarsia 29, 36
Anasa 98
Anatis 25, 63
anchorago 97
Ancylis 23, 107, 109
ancylus 16, 21, 30, 33, 105, 110
Angerona=Xanthotype 104, 111
angulifera 131
angustatus 78
Anisomorpha 9, 131
Anisopteryx=Alsophila, Paleacrita 24, 36
Anisota 130
annexa 58, 81, 87
annularis 42
annulata 91
annulatus 119, 123
annulipes 26, 28
Anobium. *See* Sitodrepa.
Anomala 40, 45
Anomalon 62
anonyma 62
Anophcles 118, 124
antennata 27
antennator 44
Antheræa 131
Anthomyia=Pegomya 49, 91
Anthonomus 27, 32, 42, 107, 128
Anthrenus 113, 117
antiopa 130
aonidum (*see* Chrysomphalus ficus) 17
Apanteles 28
Apantesis 45, 52, 58, 71
Apatela 71, 107, 108, 130
Aphelinus 17, 19
Aphis 10, 25, 35, 42, 50, 55, 91
apicale 62
Apiomerus 47
Apis 128
Aræcerus 7
Aramigus 7, 102
Archips 23, 69
Archytas 42
arcuata 59, 106
arenarius 77
Arctia=Apantesis 45, 52, 58

Page.

Argas 123
arge 52
argillacea 42
argus 95
Arilus 47
Aristotelia 69
armiger=Heliothis obscura 41, 56, 81, 86, 96, 97
armigera 99
armoraciæ 90
Artipus 8
arvensis 64
Asecodes 28
Asilus 48
asini 122
Asopia=Hypsopygia 73
Asopia=Pyralis 73, 112
asparagi 97, 131
Aspidiotus 12, 15, 16, 17, 21, 22, 30, 32, 33, 34, 38, 105, 110, 127
Aspidiotus=Chrysomphalus 12, 17, 18
Aspidisca=Coptodisca 23
Aspidoglossa 32
Aspilates=Catopyrrha 70
assimilis 76
asterias=Papilio polyxenes 100
atlanis 54, 60, 61, 74, 75, 96
atlas 131
Atomosia 48
atratus 121
atripes 47
atriventris 92
Atropos=Troctes 116
atropos 121
atrox 62
Atta 42
Attacus 131
Attagenus 113
attenuata 46
Aulacaspis 15, 34
Aulacaspis (*see* Diaspis) 15, 34
Aulacizes 44
aurantii 12, 18
aurichalcea=Coptocycla bicolor 92
Automeris 25, 45, 70, 130, 131
Autographa 71, 77, 82, 89
âvenæ 63
azaleæ 103

Baccha 10
barbata 79
basilare 38
beckii 12, 18
Bembecia 107
bicaudatus 20, 37, 38
bicolor (Coptocycla) 92
bicolor (Rhynchites) 102
bicornis 60
bilineatus (Ophion) 49
bilineatus (Telephorus) 26, 66
bilobus 47
bimaculata 108
bimaculatus 9, 103
binotatus 60
bioculatus 18
bipunctalis 90
bipunctata 25, 65

Page.

biselliella 117
biustus 8
bivittata 95
bivittatus 54, 61, 73, 75, 96, 104
bivulnerus 18, 48, 92
blanda 79, 84
Blatta 116
Blattella 116
Blennocampa 40
Blissus 55, 63, 78, 127
Boarmia=Cleora, Ectropis.
Bombyx 125
Boophilus 119, 123
borealis (Epilachna) 99
borealis (Gryllotalpa) 9
Botis=Pachyzancla 90
botrana 41
boucheanus 28
bovis 122
Brachinus 92
Brachytarsus 115
brassicæ (Aphis) 91
brassicæ (Autographa) 71, 77, 82, 89
brassicæ (*Oscinis*)=Scaptomyza graminum 91
brassicæ (Pegomya) 91
brevis 118
Bruchophagus 61, 74
Bruchus 85, 86
brunnea 40, 67, 79
brunneus 114
Bryobia 67
bubalus 20, 35
Bucculatrix 23
bullatus 77
buprestoides 9, 131

Cacœcia=Archips 23, 69
cacti 13, 18
cæsar 118
cæsonia 72
cahiritella=Ephestia cautella 112
Calandra 57, 115
calcitrans 118, 121
calidus 46
californica (Coccinella) 18
californica (Tetranychoides) 9
californicus 9
caliginosus 32, 92
calleta 130
Callida 47
Callidryas 73
Callimorpha=Haploa 29
callipyge 103
Callosamia 130, 131
callosus 52
Calocoris 44, 107
Calosoma 42
Calyptus 107
Cambala 91
caminea=Cerotoma trifurcata 83
Camnula 62
canadensis 102
Canarsia 23
candida 19, 37
canellus 106
canis 119, 122

Page.

Cantharis ... 63, 80, 83
capitata ... 29
capitis ... 120
Caradrina ... 76
carbonaria ... 65
cardinalis ... 13, 129
Carneades=Euxoa ... 25, 52, 71, 101
carolina (Dissosteira) ... 60, 75
carolina (*Protoparce*)=Phlegethontius sexta 80, 95
carolina (Stagmomantis) ... 47, 130
carolina (Tetracha) ... 47
Carpocapsa ... 26, 128
Carpophilus ... 113
casei ... 117
Cassida ... 92, 95
cassidea=Chelymorpha argus ... 95
catenaria ... 104, 130
caterva=Cingilia ... 104
Cathartus ... 112
Catolaccus ... 107
Catopsilia=Callidryas ... 73
Catopyrrha ... 70
Caulophilus ... 115
cautella ... 112
cavicollis ... 30
Cecidomyia ... 65, 68, 74, 124
Cecidomyia=Dasyneura ... 74
cecropia ... 26, 131
Celatoria ... 67, 78
celeus (*Protoparce*)=Phlegethontius quinquemaculatus ... 80, 95
Centrinus ... 78
cepetorum ... 101
Cephus ... 64
cerasi=Eriocampoides limacina ... 31
Ceratitis ... 29
cerealella ... 112
cerealis ... 63
cereralis=Loxostege commixtalis ... 60
Ceresa ... 20, 35
Ceroplastes ... 11, 14
Cerotoma ... 83
ceto (Melittia)=satyriniformis ... 98
Ceutorhynchus ... 91
cervicalis ... 18
Chætocnema ... 79, 94
Chætopsis ... 55, 101
Chalcis ... 28
Chalepus ... 57
chalybea ... 40
Chariesterus ... 44
Chauliognathus ... 26, 32
Chelymorpha ... 95
Chilo ... 57
Chilocorus ... 13, 17, 18, 48, 92, 127
chinensis ... 86
Chionaspis ... 12, 15, 22, 31, 33, 103
Chiropachys ... 29
Chloridea ... 81
Chlorops ... 65, 76
Chrysobothris ... 8, 19, 37
chrysoela ... 8
Chrysomphalus ... 12, 17, 18
Chrysomyia ... 119, 122
Chrysopa ... 10, 46, 65
Chrysophanus=Heodes ... 72

Page.

chrysorrhœa ... 25, 35, 130
Chrysops ... 121
Cicada=Tibicen ... 21, 27, 29
Cicadula ... 44, 64
Cicindela ... 47
Cimex=Klinophilos ... 120
cinctus ... 121
cinerea (Epicauta) ... 56, 80, 93
cinerea (Piesma) ... 13
cinereola ... 85
Cingilia ... 104, 130
cingulata (Phlegethontius) ... 94
cingulata (Rhagoletis) ... 30
cirripediformis ... 11, 14
Citheronia ... 130
citri (Aleyrodes) ... 10, 19
citri (Chionaspis) ... 12, 15
citri (Pseudococcus) ... 10, 13
citricola (*Mytilaspis*)=Lepidosaphes beckii. 12, 18
clandestina ... 53, 88
claripennis ... 77
clavata ... 10
Cleora ... 97, 104, 130
Cleora=Ectropis ... 70
Clisiocampa=Malacosoma ... 24, 35
c-nigrum ... 53, 59
coagulata ... 42
coccidivora (Dakruma) ... 18
coccidivora (Hyperaspidius) ... 18
Coccinella ... 18, 25, 48, 63, 92
Coccophagus ... 15
Coccotorus=Anthonomus ... 32
Coccus ... 11, 14
Cœlostathma ... 69
cognatus ... 15
Colaspis ... 40, 67, 79
Coleophora ... 22
Colias=Eurymus, Zerene.
Collops ... 48, 67
colon ... 29
columbia ... 131
comes ... 41
comma ... 65
commelinæ ... 71, 81, 95
commixtalis ... 60
communis (Melanotus) ... 51
communis (Meteorus) ... 28
compositus ... 7
Compsomerus ... 49
Compsomyia=Chrysomyia ... 119, 122
comstockii ... 49
comptana ... 107, 109
comyntas ... 72
concavus ... 102
confederata ... 9
confinis ... 94
confusum ... 114
Conocephalus ... 44
Conorhinus ... 119
Conotrachelus ... 27, 32, 129
conquisitor ... 26, 28
consputa ... 78
contristatus ... 18
convergens ... 18, 25, 92
convexior ... 79, 102
Copidryas ... 76

	Page.
Coptocycla	92, 94
Coptodisca	23
Corimelæna	101, 109
Corizus	13
cornutus	115
corrupta	84
corvina	93
Corynetes=Necrobia	117
costalis (Hypsopygia)	73
costalis (Tabanus)	121
Crambus	50, 59, 105
Craponius	41, 125
crassipes	47
crenicollis	79
Crepidodera	26
crepuscularia	70
cresphontes=Papilio hoas	8
cribulosus	51
Crioceris	97, 131
cristatus	47
crocataria	104, 111
cruciferarum=Plutella maculipennis	89
Cryptocephalus	46, 109
Ctenocephalus	119, 122
cucumeris	79, 94, 99
cucurbitæ (Ægeria)=Melittia satyriniformis	98
Culex	119, 124
Culex=Stegomyia	118
cunea	25, 35, 108, 130
curculionis	32
Cylas	94
cylindrica	63
Cymatophora	110
Cymatophora=Ectropis	70
cynthia	130, 131
Dactylopius=Pseudococcus	10, 11, 13
Dakruma	18
Dasyneura	74
Datana	130
debilis (Solenopsis)	50
debilis (Chalcis)	28
decemlineata	92
decemnotata	26
decora	47
deflorata	45
Deilephila	76
denticollis	46
denticulata	79
Depressaria	100
Dermacentor	123
Dermestes	117
Desmia	40
destructor	65, 124
destructor(*Dactylopius*)=Pseudococcus citri.	10, 13
devastatrix	53, 88
Diabrotica	51, 67, 78, 84, 97, 99
diabroticæ	67, 78
Diacrisia	45, 52, 85
diadema	47
Diaphania	98
Diapheromera	43
diaspidis	17
Diaspis	15, 34
Diastrophus	108
Diatræa	54, 57
Dibrachys	28
Dichelia=Epagoge	69, 98
Dictyophorus	9
Dicyphus	82
didactylus	91
Diedrocephalus	64
differentialis	54, 61, 74, 75
diffinis	16
dimidiatus	113
Dinoderus	114
Diogmites	48
Diplosis	102
Diplotaxis	106
discolor	48
discopunctata	69
Disonycha	79
dispar (Porthetria)	25, 36, 130
dispar=Xyleborus pyri	20, 31
dissimilaria	70
Dissosteira	60, 75
distans	8
divinatoria	115
domestica (Lepisma)	115
domestica (Musca)	119, 124
domesticus (Gryllus)	116
Dolerus	64
domitia	47
dorsalis	84
Doryphora=Leptinotarsa	92
Drasteria	58, 70
Drosophila	117, 118
duodecempunctata (Crioceris)	97, 131
duodecempunctata (Diabrotica)	51, 67, 78, 84, 97, 99
Dysdercus	10, 42
Echocerus	115
Ecpantheria	45
Ectobia=Blatella	116
Ectropis	70
editha	72
edusa	58
Elaphidion	8, 20
Elasmopalpus	54, 83
electus	123
elongata (Oripoda)	27
elongata (Systena)	46
elongatus	92
Emblethis	77
Emphytus	102
Empretia=Sibine	8, 52
Enarmonia	74
Ennomos	24
Entilia	45
Entomoscelis	90
Epagoge	69, 98
ephemeræformis	8, 25, 36, 130
Ephestia	111, 112
Ephestia. (*See* Plodia)	112
Epicærus	26, 67, 78, 84
Epicauta	56, 80, 93, 94
Epilachna	84, 99
Epitragus	8
Epitrix	46, 79, 82, 89, 94, 99
Epizeuxis	55

Page.

equi 121
Erannis 24
Erax 48
erechtea 58, 70
Eriocampa=Eriocampoides 31
Eriocampoides 31
Eriococcus 103
Eriophyes 9, 31, 37, 129
eruditus (*Hypothenemus*) = Stephanoderes hispidulus 7
Erythroneura=Typhlocyba 41
Estigmene 45, 52, 58, 85, 89
esurus 49
eubule 73
Eudamus 85, 130
Eudamus=Thorybes 72
Eudemis 105
Eudemis=Polychrosis 41
Eudioptis=Diaphania 98
Eudryas=Euthisanotia 39, 130
Eulecanium 14, 30, 32, 109
Eulia 68, 98
euonymi 103
Euphoria 26, 45, 56
Euphorocera 77
Euphydryas 130
Euplectrus 49
Euproctis 25, 35, 130
Eurema 73
Eurycyttarus 9
Eurymus 72
eurysternus 122
eurytheme 72
Euschistus 10, 44, 82
euterpe 73
Euthisanotia 39, 130
Euthoctha 10, 78, 109
Euvanessa 130
Euxoa 25, 52, 71, 101
Everes 72
Evergestis 89
Exartema 107, 108
exigua 76
exitiosa (Cicadula) 64
exitiosa (Sanninoidea) 29, 36
Exochomus 18
extensicornis 64
exul 121

farcta 59, 84
farinalis 73, 112
fasciata (Phymata) 47
fasciata (Stegomyia) 118, 124
fasciatum 19
fasciatus 44, 82
fasciculatus 7
Feltia 43, 53, 58, 81, 85, 87, 88
femorata (Chrysobothris) 19, 37
femorata (Diapheromera) 43
femoratus 44
femur-rubrum 54, 62, 74, 75, 96
ferrugalis 100, 102
ferrugineum 114
fervens 42
ficus 12, 17
Fidia 39

Page.

flavedana 56, 69
flavescens 68
flaviceps 64
flavipes (Hippelates) 118
flavipes (Leucotermes) 103, 116
floridanus 8
floridensis 11, 14
forbesi 16, 21, 32, 33
forceps 116
formicarius 94
fragariæ 106
fratria 100
frenchii 75
frigida 59
frondicola 106
Frontina 28, 48, 75
frugiperda 52, 58, 59, 60, 62, 69, 76, 88, 130
fulleri 7, 102
fumata 113
funebris 61, 74
funeralis 40
fur 114
furcata 118
furfura 15, 22, 31, 33
fusca 50, 59, 79
fusciceps 49
fuscula 46, 89, 94

galeator 10, 78, 109
Galerita 47
Galerucella 30, 131
Gastrophilus 121
Gelechia=Aristotelia, Phthorimæa, Sitotroga.
gemellatus 112
Geocoris 77
germanica 116
gibbosa 50, 68, 78
gibbosus 100
glacialis 92
glaucaria=Synchlora ærata 109
gloveri (Copidryas) 76
gloveri (Lepidosaphes) 13, 18
Gortyna 66
Gortyna=Papaipema 54, 62, 92
gossypii 10, 42
graminum 91
granaria (Calandra) 115
granaria (Macrosiphum) 63
grande 64
grandis (Anthonomus) 42, 128
grandis (Lebia) 92
granella 111
Grapholitha=Enarmonia 106
Graphops 74
Graphorhinus 68
Grapta=Polygonia 65, 111
grata 39, 130
grataria 70
grossulariæ (Pristiphora) 111
grossulariæ (Zophodia) 111
grotei 27
Gryllotalpa 9
Gryllus 116
guttata=Coptocycla signifera 94
Gymnonychus appendiculatus (*see* Pristiphora grossulariæ) 111

Page.

Hadena 53, 88
Hadronema 77
Hæmatobia 122
Hæmatopinus 122
Hæmatopsis 70
Halisidota 130
Haltica 40, 106
Halticus 77, 85
hammondi 23
Hapithus 43
Haploa 29
Harmonia 25
Harpalus 32, 92
Harpiphorus 106
Harrisina 40, 125, 130
hederæ 12, 17
Heliophila 55, 58, 62, 70, 76, 130
Heliothis 41, 56, 86, 96, 97
Heliothis=Chloridea 81
Hellula 91
Helluomorpha 47
Hemerobius 10
Hemerocampa 24, 28, 35, 130
hemisphærica 11, 14
Heodes 72
heracliana 100
herilis 53
hesperidum 11, 14
hilaris (Chrysops) 121
hilaris (Nezara) 10, 92
Hippelates 118
Hippodamia 18, 25, 63, 92
hirtifrons 64
hispidulus 7, 20
histrionica 89
Holcocephala 48
Homalodisca 42
Homalomyia 118
Homoptera 58, 130
Hoplia 103
hordei 64
hortuellus 105
humuli (Hypena) 66
humuli (Phorodon) 32, 65, 125, 126
hyalinata 98
hyalinus 13
Hybernia=Erannis 24
Hydræcia=Papaipema 54, 62, 92
Hylastes=Hylastinus 66
Hylastinus 66
Hypena 66
Hypena=Plathypena 70
Hyperaspidius 18
Hyperchiria=Automeris 25, 45, 70
Hyphantria 25, 35, 108, 130
hyphantriæ 28
Hypoderma 122
hypophlœas 72
Hypostena 79
Hypothenemus=Stephanoderes 7, 20
Hypsopygia 73

Icerya 10, 13, 128
Ichneumon 24
ignita 106
imbricatus 26, 67, 78, 84

Page.

imbricornis 37
immanis 66
imparis 50
inæqualis 41, 125
incertus 107
inconstans 102
inda 26, 56
indiginella 23, 36
inerme 8
inguinalis 120
innumerabilis 14, 38
instrutana 73
inquisitor 28
interpunctella 112
interrogationis 66, 130
interstinctana 74
io 25, 45, 70, 130, 131
irritans 120
irrorata 44
isabella 59, 72, 77
Isia 59, 72, 77
Isodontia 48
Isosoma 41, 64
Ithycerus 20
Ixodes 123

jorulla 130
juglans-regiæ 16, 34
juncta 93

kansanus 92
kirschii 113
Klinophilos 120
kuehniella 111

Lachnosterna 50, 59, 68, 78, 79, 84, 106
Læmophlœus 113
lætus 24
Lampronotus 59
Languria 66
lanigera 19, 34
Laphria 48
Laphygma 52, 58, 59, 60, 62, 69, 76, 88, 130
lardarius 117
Lasioderma 83, 114
Lasioptera 124, 125
lataniæ 17
lateralis (Erax) 48
lateralis (Tettigidea) 44
laticinerea 27
latinasus 115
latipennis 39
latiusculus 101
Lebia 92
Lecanium=Coccus 11, 14
Lecanium=Eulecanium 14, 30, 32, 109
Lecanium=Saissetia 11, 14, 15, 22
lecontei 29
lectularia 120
legitima 81, 98
leguminicola (Cecidomyia)=Dasyneura trifolii 74
Lema 46, 93
Lemonias 72
lentis 86
Lepidosaphes 12, 18, 22, 33

Page.

Lepisma 116
Leptinotarsa 92, 93
Leptoglossus 10, 44, 98
Leptostylus 8
Leptus 120
Leucania=Heliophila 55, 58, 62, 70, 76, 130
Leucarctia=Estigmene 45, 52, 58, 85, 89
leucopterus 55, 63, 77, 127
leucostigma 24, 28, 35, 130
Leucotermes 103, 116
lignosellus 54, 83
Ligyrus 57, 100
limacina 31
Limacodes=Prolimacodes 9
liminaris 29
Limneria 28, 77
lineata (Deilephila) 76
lineata (Hypoderma) 122
lineatella 29, 36
lineatus 68
lineola 121
lisa (*Terias*)=Eureme euterpe 73
Lissorhoptrus 58
Listronotus 101
Lita=Phthorimæa 82, 92
lividus 46
Lixus 102
longicornis 51, 67
longipes 39
longispinus 11, 13
Lophoderus=Eulia 68, 98
Lopidea 96
Loxostege 60, 69, 76, 77, 87, 102
Lucilia 118
lugubre 42
luna 130, 132
lunata 130
luteola 131
Lycæna=Everes 72
Lygus 68, 77, 89
Lysiphlebus 49, 63

macellaria 119, 122
Macrobasis 68, 79, 83, 93
Macrodactylus 56
Macrosilia=Phlegethontius 94
Macrosiphum 63, 73
maculata (Epicauta) 80, 94
maculata (Halisidota) 130
maculata (Megilla) 92
maculatus (Harpiphorus) 106
maculipennis (Anopheles) 118, 124
maculipennis (Plutella) 89
maidis 55
maidis-radicis 50
Malacosoma 24, 35, 130
malariæ 129, 130
malefida 43, 88
mali (Aphelinus) 19
mali (Aphis) 25, 35
mali (Pterocyclon) 19
malifoliella 24
malivorella 22
Mamestra 70, 72, 76, 77, 81, 88, 97
mancus 50, 101
Margaronia=Diaphania 98
marginata (Anomala) 45

Page.

marginata (Bembecia) 107
marylandicus (Nematus)=Pachynematus extensicornis 64
mauritanicus 113
maxillosus 115
Mayetiola 65
media 96
Megalopyge 8
Megastizus 27, 29
Megilla 92
megnini 123
melancholica 45
melanocephalus. (*See* callosus.)
Melanoplus 54, 55, 60, 61, 62, 73, 74, 75, 96, 104
Melanotus 51
melinus 86
Melitæa=Euphydryas, Lemonias.
Melittia 98
mella 28
mellifera 128
Melolontha 128
Melophagus 122
Memythrus 38
mercator 112
meridionale 120
Meromyza 60, 65
Mesograpta 48, 56
messoria 52, 71, 101
Metapodius 44
Meteorus 28
mexicanus 121
micans 118
Microcentrum 9, 104, 131
milberti 48
militaris 77
Mineola 23, 36, 105
minians 52, 71
miniatus 123
minimus 82
ministra 130
minuta 23, 104
misella 17
molitor 114
mollipes 64
Monarthrum=Pterocyclon 19
Monocrepidius 46, 78
monodactylus 94
Monomorium 117
Monophadnoides 108
Monophadnus=Monophadnoides 108
Monoptilota 83
Monoxia 78
monuste 87
Morellia 118
mori 125
mozardi 66
mucorea 82
Murgantia 89
Musca 119, 124
Myochrous 46
myron 39, 130
Mytilaspis=Lepidosaphes 12, 13, 18, 22, 33

nais 58, 71
nasalis 121
nebulosus=Diastrophus turgidus 108
nebulosus (Graphops) 106

	Page.
nebulosus (Sphragisticus)	77
Necrobia	117
Nematus=Pteronus, Pachynematus.	
Nemobius	44
nenuphar	27, 32, 129
Nephelodes	52, 71
nerii=Aspidiotus hederæ	12, 17
Nezara	10, 92
nicippe	73
nigricana	87
nigrofasciatum	14, 109
nigripes	95
nigrovittatus	121
nimbatana	102
nitela	54, 62, 92, 95
nitens=imparis	50
nitida	26
nitidalis	98
niveus	38, 108
Noctua	53, 59, 88
Nodonota	46, 103, 107
noveboracensis	20
novemnotata	25, 92
Novius	13, 129
nubeculana	23
nubilella	83
nuncius	49
nuttalli	63, 80, 83
Nysius	78
Oberea	108
oblinita	71, 107, 108
obliteralis	102
obscura	41, 56, 81, 86, 96, 97
obscurum (Acridium)	44
obscurum (Tenebrio)	113
obscurus	57
obtectus	85
obtusus	44
occidentalis	64
ocellana	22, 36
ochreus (Sphenophorus)=æqualis	51, 63
Oeneria=Porthetria	25, 36
octomaculata	40, 130
oculata	18, 48
Odontota	84
Œcanthus	38, 39, 82, 108
Œstrus	122
Ogdoconta	85
Oiketicus	45
oleæ	11, 15, 22
oleivorus	9, 129
oleracea	87
Olethreutes	73, 102
Oncognathus	60
Oncometopia	41
opercularis	8
operculella	82, 92
Ophion	49, 77
oppositus	98
Orchestes	26
Orgyia=Hemerocampa	24, 28
orientalis	116
Oripoda	27
orizaba	130
Ornithodoros	123

	Page.
ornithogalli	43
oryza	57
oryzæellus=Chilo plejadellus	57
Oscinis	65
Oscinis=Scaptomyza	91
ostreæformis	16, 22, 34
Otiorhynchus	105
ovata	28
ovatus	105
ovinus	122
ovis	122
Oxyptilus	40
Pachnæus	8
Pachynematus	64
Pachyzancla	90
Palæococcus	103
Paleacrita	24, 36
pallicornis	26
pallidula	92
pallipennis	113
pallipes (Agonoderus)	49
pallipes (Polistes)	92
Palorus	115
pampinaria	97, 104, 130
panicea	83, 114
Papaipema	54, 62, 92, 95
Papilio	8, 100, 130
Paratenodera	131
parenthesis	63
Parlatoria	13, 18
parvula	82
parvulus	51, 59
Pasimachus	92
pectoralis	86
pecuarum	119, 120
Pediculoides	27
Pediculus	120
Pegomya	49, 75, 91, 101
pellionella	117
pellucida	62
penicellus	78
pennsylvanicus (Chauliognathus)	26, 32
pennsylvanicus (Epicauta)	56, 80, 93
pentagona	15, 34
Penthina=Olethreutes	73, 102
pergandei	13, 18
Peridroma	53, 60, 66, 71, 76, 81, 88
Periplaneta	116
Periplaneta=Blatta	116
periscelidactylus	40
Perithemis	47
permundana	107, 108
permundus	47
perniciosus	17, 21, 30, 33, 110, 127
persicæ	30, 32
persicæ-niger	35
personatus	129
pertinax	51
phæton	130
Phanurus	121
pharaonis	117
Pharaxonotha	113
philadelphica	48
Philampelus=Pholus	39
philodice	72

Page.

Philosamia 130, 131
Phlegethontius 80, 94, 95, 130
Phlœopthorus 29
Phlœotribus=Phlœopthorus 29
Phlyctænia 100, 102
Pholus 39
Phorbia=Pegomya 49, 101
Phorodon 32, 65, 125, 126
Phoxopteris=Ancylis 107, 109
Phthirius 120
Phthorimæa 82, 92
phyllira 45
Phyllopalpus 43
phyllopus 10, 44
Phyllotreta 90
Phylloxera 38, 125
Phymata 47
Physonota 95
Phytonomus 67
Phytoptus=Eriophyes 9, 31, 37, 129
piceus (Alphitobius) 115
piceus (Attagenus) 113
picta (Harmonia) 25
picta (Mamestra) 72, 76, 90, 97
pictipennis 49
Pieris=Pontia 87
Piesma 13
piliventris 42
Pimpla 26, 28
Pionea=Evergestis 89
Piophila 107
pipiens 119
pisorum 86
placidus 111
Plasmodium 129, 130
Plathypena 70
Platynota 8, 43, 56, 69
Platypus 7
plejadellus 57
Plodia 112
plorabunda 10
Plusia 100
Plusia=Autographa 71, 77, 82, 89
Plutella 89
Podabrus 63
Podisus 92, 97, 111
pœas 42
Pœcilocapsus 68
Polistes 42, 49, 92
polistiformis 38
polita 48, 56
Polychrosis 41
Polygonia 65, 66, 111, 130
polyphemus 130, 132
polyxenes 100, 130
pometaria 24, 36
pomifoliella 23
pomonella (Carpocapsa) 26, 128
pomonella (Rhagoletis) 27
pomorum (*Mytilaspis*)=Lepidosaphes ulmi 18, 22, 33
Pontia 87
popeanella 69
Porthetria 25, 36, 130
pratensis (Bryobia) 67

Page.

pratensis (Lygus) 68, 77, 89
Prenolepis 50
Prionidus=Arilus 47
Prionus 37
Pristiphora 111
privatus 94
Proconia=Oncometopia 41
Procris=Harrisina 40
Proctocanthus 48
Prodenia 43, 71, 81, 95
progne 111
Prolimacodes 9
promethea 130, 131
propinquus 96
proteus 85, 130
protodice 87
Protoparce=Phlegethontius 80, 95, 130
proxima 65
prunicida 32
Psenocerus 110
Pseudococcus 10, 13
Psila 100
Psocus=Troctes 116
Psÿche=Eurycyttarus 9
Psylla 31, 37
Psylliodes 79, 99, 101
Pterocyclon 19
Pteronus 111, 129
Pterophorus 94
Pterostichus 47
Ptinus 114
pubescens=Xyleborus species 7, 57
puella 48
pulchellus 43
Pulex=Ctenocephalus 119, 122
pulicaria 101, 109
Pulvinaria 14, 38
punctatus 67
puncticollis (Monoxia) 78
puncticollis (Nodonota) 103, 107
punctifer 121
punctulata 99
pungens (Culex) (*see* C. pipiens) 119
purchasi 10, 13, 128
purgatum 77
purpurascens 62
pusilla 90
pusillus 113
pygmæa (Blennocampa) 40
pylades 72
Pyralis 73, 112
Pyralis=Hypsopygia 73
pyri (Eriophyes) 31, 37
pyri (Psylla) 31, 37
pyri (Xyleborus) 20, 31
pyricola=Psylla pyri 31, 37
Pyrrharctia=Isia 59, 72

quadrigibbus 27
quadrimaculatus (Anopheles) (*see* A. maculipennis) 118, 124
quadrimaculatus (Bruchus) 86
quadrimaculatus (Collops) 48, 67
quadrimaculatus (Cryptocephalus) 109
quadrimaculatus (Œcanthus) 82

Page.

quadrinotata 49
quinquemaculata 80, 95, 130
quinquepunctata 25, 63

rapæ (Ceutorhynchus) 91
rapæ (Pontia) 87
rapax 17, 21, 34
rapidus 44, 107
ratzeburgi 115
Reduvius 129
regalis 130
renigera 70
repetitalis (Botis) = Pachyzancla bipunctalis. 90
reticulatus (Dermacentor) 123
reticulatus (Dictyophorus) 9
retinerve 9, 104, 131
Rhagoletis 27, 30
rhexiæ (Heliothis) = Chloridea virescens 81
Rhopalosiphum 103
Rhynchites 102
ribearia 110
ribesii = Pteronus ventricosus 111, 129
ricinus 123
rimosalis 89
rosaceana 23, 69
rosæ (Aulacaspis) 15, 34
rosæ (Palæococcus) 103
rosæ (Psila) 100
roseosuffusella 69
rostrana 8, 43
Rothschildia 130
rubi 108
rubicunda 130
rubigalis = Phlyctænia ferrugalis 100, 102
rubiginosus 42, 49
rubra 132
ruficollis 108
rufimanus 86
rufipes (Crepidodera) 26
rufipes (Necrobia) 117
rugiceps 57
rugulosus 20, 29, 31, 37
rutilans 106

saccharalis 54, 57
sacchari 57
Saissetia 11, 14, 15, 22
Samia 26, 131, 132
Samia = Callosamia, Philosamia.
sanguinea 18, 25, 48, 63, 92
sanguinolenta 78
sanguisuga 119
Sannina = Sanninoidea 29, 36
Sanninoidea 29, 36
Saperda 19, 37
satyriniformis 98
saucia 53, 60, 66, 71, 76, 81, 88
saxeseni 20
sayi 42
scabra 70
scalaris 123
scandens 25
scapha 9
Scapteriscus 91
Scaptomyza 91
Scarites 47

Page.

Scatophaga 118
Schistocerca 43, 55, 61
Schizocerus 94
Schizoneura 19, 34
Sciapteron = Memythrus 38
Sciara 102
Scolops 45
Scolytus 20, 29, 31, 37
scribonia = Ecpantheria deflorata 45
scrophulariæ 117
scrutator 42
Scudderia 105
sculptilis. *See* Sphenophorus zeæ 51
Scutigera 115
Scymnus 18
Semasia 87
sentana 43
septendecim 21, 27, 29, 131
Sericaria = Bombyx 125
sericeus 48
serrata 122
serraticeps (Pulex) = Ctenocephalu scanis. 119, 122
serricorne = Lasioderma testaceum 83, 114
servus 10
Sesia 110
Sesia (*see* Ægeria) 106
sexguttata 47
sexnotata 44
sexpunctata 46
sexta 80, 95
Sibine 8, 52
Sigalphus 32
signatus 107
signifera 94
Silvanus 112
similalis 69, 76, 87
similis 17, 127
simplex (Agromyza) 96
simplex (Lissorhoptrus) 58
simplex (Plusia) 100
Simulium 119, 120
Sinea 47
sinensis 130
Sinoxylon 38
sinuata (Entilia) 45
sinuata (Phyllotreta) 90
sinuatus 32
Siphocoryne 63
Sitodrepa 83, 114
Sitones 68
Sitotroga 112
Smilia 17
solanella (*Lita, Gelechia*), Phthorimæa operculella 82
Solenopsis 50
sollicitans 124
soror 65
speciosus 27, 29
Spermophagus 86
sphærocephalus 123
Sphærophoria 63
Sphecodina 39
Sphenophorus 51, 57, 59, 63
Sphragisticus 77
Spilochalcis = Chalcis 28
Spilocryptus 49

Page.

Spilosoma=Diacrisia 45, 52, 85
spinosus 92, 97
splendoriferella 23
spretus 55, 61, 62, 74, 75
Stagmomantis 47, 130
Stegomyia 118
Stephanoderes 7, 20
sticticalis 77
stigma 130
stimulea 8, 52
Stiretrus 97
Stizus=Megastizus 27, 29
Stomoxys 118, 121
striatus (*see* Thrips tabaci) 101
subangulata 32
subdepressus 115
subgothica 53, 85, 88
subjuncta 88
subsignarius 24
subspinosus 56
subterraneus 47
sulcipes 45
sulfureana 69, 98
supernotatus 110
surinamensis 112
suturellus 10, 42
Synchlora 109
Syneta 26
Syntomosphyrum 49
Syrphus 63
Systena 46, 79, 84

tabaci 82, 101
tabanivorus 121
Tabanus 121
Tachina 28, 62
tæniata 84
tapetzella 117
tarsale 113
Telea 130, 132
Telephorus 26, 66
Tenebrio 113
Tenebroides 113
Tenodera=Paratenodera 131
Tenuipalpus 9
Teras=Acleris 23, 104
Terias=Eurema 73
Termes=Leucotermes 103, 116
testaceipes 49, 63
testaceum 83, 114
Tetracha 47, 92
Tetranychoides 9
Tetranychus 9, 103
Tettigidea 44
texana=Cassida pallidula 92
texana (Helluomorpha) 47
texensis 105
Thecla 42
Thecla=Uranotes 86
thoas 8
thoracica 48
Thorybes 72
Thrips 67, 82, 101
Thŷreus=Sphecodina 39
Thyridopteryx 8, 25, 36, 130
tibiator (Calyptus) 107

Page.

tibiator (Limneria) 77
Tibicen 21, 27, 29, 131
tiliaria 24
Tinea 111, 117
Tinea=Trichophaga, Tineola.
Tineola 117
Tipula 60
tipuliformis 110
Tischeria 24
Tmetocera 22, 36
tomentosus (Epitragus) 8
tomentosus (Podabrus) 63
tortricid. undet., under apple skin 27
Tortrix, Dichelia=Epagoge.
trachypygus 57
triangularis 79
tredecempunctata 25
Tribolium 114
Trichobaris 82, 92
Trichodectes 123
Trichophaga 117
triferana 68, 98
trifolii (Cecidomyia) 68
trifolii (Dasyneura) 74
trifolii (Hylastinus) 66
trifolii (Macrosiphum) 73
trifolii (Mamestra) 70, 77
trifurcata 83
trilineata 93
trinotata 92
Trioxys=Lysiphlebus 49, 63
tristigmus 44
tristis (Anasa) 99
tristis (Nodonota) 46
tritici (Isosoma) 64
tritici (Thrips) 67
Troctes 116
Trogoderma 113
Trogosita=Tenebroides 113
troilus 130
Tropæa 130, 132
truncatus 114
Trypeta=Acidia, Rhagoletis.
turgidus 108
Tyloderma 106
Typhlocyba 41
Typhœa 113
Typophorus 46, 106

uhleri 77, 85
ulmi 18, 22, 32
undalis 91
undata 41
unicolor 68, 79, 83, 93
unio 39
unipuncta 55, 58, 62, 70, 76, 130
Uranotes 86
uvæ 16, 38

vacciniana 105
vaccinii 105
vadosus 68
valida 28
Vanessa=Euvanessa 130
varians 40
variolarius 82

	Page.
varius=Anthrenus verbasci	113
vastatrix	38, 125
Vedalia=Novius	13, 129
ventricosus (*Nematus*)=Pteronus ribesii	111, 129
ventricosus (Pediculoides)	27
verbasci	113
vernata	24, 36
vespertinus	78
vestimenti	120
vicina	75
villosum	20
violæ	103
violicola	102
virescens	81
virginica (Diacrisia)	45, 52, 85
virginica (Tetracha)	92
viridicyaneus	46
viticida	39
viticola	124
vitifex=Typhlocyba comes	41
vitis (Isosoma)	41
vitis (Lasioptera)	125
vittata (Diabrotica)	99
vittata (Epicauta)	56, 80, 93
vittata (Phyllotreta)	90
vittatus	121
vituli	122
vulgaris	128
vulgivagellus	50, 59
Xanthonia	26
xanthomelæna	79
Xanthotype	104, 111
Xyleborus	7, 20, 31, 57
Xylina	27
xylina (*Aletia*)=Alabama argillacea	42
Xylocrius	110
xylographus=Xyleborus saxeseni	20
yamamai	131
ypsilon	53, 81, 88
zeæ, Achatodes	53
zeæ (Pegomyia, Anthomyia)=Phorbia fusciceps	49
zeæ (Sphenophorus)	51
zeellus	50
Zelus	47
Zerene	72
zimmermani=Phyllotreta sinuata	90
Zophodia	111

INDEX TO COMMON NAMES.

Page.

Abbot's bagworm. (*See* Bagworm.)
sphinx. (*See* Sphinx.)
Achemon sphinx. (*See* Sphinx.)
Agitating cricket. (*See* Cricket.)
Agonoderus, seed-corn. (*See* Corn.)
Aleyrodes. (*See* White-fly.)
clover. (*See* Clover.)
Alfalfa webworm. (*See* Webworm.)
Ambrosia-beetle, apple 7
cosmopolitan 20
oak 7
American cockroach. (*See* Cockroach.)
copper. (*See* Butterfly.)
dog-tick. (*See* Tick.)
frit-fly. (*See* Frit-fly.)
gad-fly. (*See* Gad-fly.)
locust. (*See* Locust.)
soothsayer. (*See* Rearhorse.)
Angoumois grain-moth. (*See* Grain.)
Angular-winged katydid. (*See* Katydid.)
Angulated silkmoth. (*See* Silkmoth.)
Anomala, varied 40
Ant, leaf-cutting 42
little black 50
red 117
small yellow 50
white 103, 116
Aphis, apple-tree 25, 35
black peach 35
corn 55
corn-root 50
cotton 10, 42
orange 10
violet 103
woolly apple 19, 34
Apple, ambrosia-beetle 20
curculio 27
fruit maggot 27
leaf flea-weevil 26
leaf-folder, lesser 23, 104
miner 24
sewer, Chapin's 23
skeletonizer 23
tree aphis 25, 35
borer, flat-headed 19, 37
round-headed 19, 37
Bucculatrix 23
tree pruner 20
shot-borer 20
shot-hole borer 20, 29, 31, 37
tent-caterpillar 24, 35, 130
twig-beetle 7, 20
borer 20, 37, 38
wood-stainer 19
woolly aphis 19, 34
worm (codling moth) 26
Arge tiger-moth. (*See* Tiger-moth.)

Page.

Argus tortoise-beetle. (*See* Tortoise-beetle.)
Army worm 55, 58, 62, 70, 76, 130
beet 76
fall 52, 58, 59, 60, 62, 69, 76, 88, 130
wheat-head 62
Ash-gray blister-beetle. (*See* Blister-beetle.)
Asiatic ladybird. (*See* Ladybird.)
Asparagus beetle, common 97, 131
twelve-spotted 97, 131
miner 96
Australian ladybird. (*See* Ladybird.)
Azalea bark-scale. (*See* Scale.)

Bagworm, Abbot's 45
Bagworm, the common 8, 25, 36, 130
Baltimore, the common. (*See* Butterfly.)
Banded cricket. (*See* Cricket.)
flea-beetle. (*See* Flea-beetle.)
Bark-beetle, fruit-tree (shot-hole borer) ... 20, 29, 31, 37
native peach 29
Bark-louse, oyster-shell 18, 22, 32
scurfy 15, 22, 31, 33
Barley-straw worm 64
Barnacle scale. (*See* Scale.)
Barred-winged onion maggot. (*See* Onion.)
Bean cutworm 85
ladybird 83
leaf-beetle 83
stem-borer, Lima 83
weevil, common, European 85
four-spotted 86
Mexican 86
Beautiful wood nymphs. (Large and small.) (*See* Wood nymph.)
Bedbug 120
Bee, honey 128
Beet army worm 76
Chlorops 76
leaf Pegomya 75
Beetle. (*See under* Ambrosia, Asparagus, Bark, Blister, Cucumber, Flea, Flower, Grain, Pine, Leaf, Potato, Spider, and Tortoise beetles.)
black 116, 120
cabinet 113
carpet, black 113
carrot 100
cigarette 83, 114
drug store 83, 114
elm, leaf 131
flower, California 103
larder 117
May 50, 59, 79
red turnip 90
sap 45, 113
snout, imbricated 26, 67, 78, 84
sugar-cane 57

Page.

Beetle, tiger, Carolina 47
Bill-bug, blue-grass 51, 59
calloused 52
clay-colored 51, 63
corn, northern 51
tenacious 51
Black aphis of violet. (*See* Violet.)
beetle. (*See* Cockroach.)
blister beetle. (*See* Blister beetle.)
bordered yellow. (*See* Butterfly.)
carpet beetle. (*See* Carpet-beetle.)
cutworm. (*See* Cutworm.)
gadfly. (*See* Gadfly.)
gooseberry borer. (*See* Gooseberry.)
legged tortoise-beetle. (*See* Tortoise beetle.)
peach-aphis. (*See* Aphis.)
scale. (*See* Scale.)
striped, ear-fly. (*See* Ear-fly.)
gad-fly. (*See* Gad-fly.)
Blackberry gall-maker 108
Blister-beetle, ash-gray 68, 79, 83, 93
black 50, 80, 93
crow 93
margined 56, 80, 93
Nuttall's 63, 80, 83
spotted 80, 94
striped 56, 80, 93
white 93
mite, pear 31, 37
Blood-red ladybird. (*See* Ladybird.)
sucking cone-nose 119
Blue-grass bill-bug. (*See* Bill-bug.)
spangled peach-moth 29
Body louse. (*See* Louse.)
Bogus potato beetle 93
Boll, cotton, cutworm. (*See* Cotton.)
weevil. (*See* Cotton.)
worm. (*See* Cotton.)
Book louse 116
Borer. (*See under* Apple tree, Cane, Clover, Corn, Currant, Gooseberry, Grain, Grape, Peach, Raspberry, Squash-vine, Stalk, Stem, Strawberry, Sugar-cane, Sweet potato.)
Bot-fly, horse 121
Mexican 121
sheep 122
Bot, ox 122
Broad-horned flour-beetle. (*See* Flour-beetle.)
nosed grain weevil. (*See* Weevil.)
Bronzed cutworm. (*See* Cutworm.)
Brown aphis of violets. (*See* Violet.)
dung fly. (*See* Fly.)
fruit chafer. (*See* Fruit.)
leaf-hopper. (*See* Leaf.)
spider beetle. (*See* Spider beetle.)
tail moth. (*See* Moth.)
Bud moth, eye-spotted 22, 36
worm, false 97
Rose 102
Tobacco 81
Bucculatrix. (*See* Apple tree.)
Buffalo. (*See* Gnat, Tree hopper.)
"Buffalo-moth." (*See* Carpet-beetle.)

Page.

Bug. (*See* Bill-bug, Plant-bug, Squash bug.)
buffalo 117
chinch 55, 63, 77, 127
clouded pigweed 77
croton 116
false chinch 78
harlequin cabbage 89
kissing 129
mealy 10, 11, 13
military 77
negro, little 101
purslane 77
red (*Dysdercus*) 10, 42
red (*Leptus*) 120
sandy ground 77
wheel 47
Butterfly, American copper 72
Baltimore 130
black-bordered yellow 72
cabbage, large 87
cloudless sulphur 72
comma 65
comyntas 72
gray comma 65
gray hair-streak 86
little sulphur 72
mourning-cloak 130
northern cloudy wing 72
parsnip 130
pot herb 87
progne 111
semicolon 66, 130
southern dog-face 72
spice-bush swallow-tail 130
yellow 72

Cabbage, bug, harlequin 89
butterfly, large 87
curculio 91
flea-beetle, western 90
looper 71, 77, 82, 89
leaf-miner, imported 91
maggot 91
plant-louse 91
webworm, imported 91
worm, cross-striped 89
imported 87
southern 87
Cabinet beetle. (*See* Beetle.)
Cadelle 113
California flower beetle 103
red scale 12, 18
Calleta silkmoth. (*See* Silkmoth.)
Calloused bill-bug. (*See* Bill-bug.)
Cane-borer, raspberry 108
red-necked 108
Canker-worm, fall 24, 36
spring 24, 36
Carolina. (*See* Locust, Rear-horse, Tiger-beetle.)
Carpet beetle, black 113
Carrot beetle 100
rust-fly 100
Case-bearer, orange. (*See* Orange.)
pistol 22
making clothes moth. (*See* Clothes moth.

Page.

Castor-bean tick. (*See* Tick.)
Cat and dog flea. (*See* Flea.)
Caterpillar, apple-tree tent 24, 35, 130
celery 100, 130
grape-vine hog 39, 130
hickory horned-devil 130
melon 98
oak tussock 130
orange hog 8
purslane 76
saddle-back 8, 52
salt marsh 45, 52, 58, 85, 89
skiff 9
social grape 40, 125, 130
stinging 8
wheat, false 64
white-marked tussock 24, 28, 35, 130
yellow bear 45, 52, 85
yellow-necked 130
zebra 72, 76, 90, 97
Cattle louse 123
tick 119, 123
ticks 123
Cauliflower pyralid 90
Cecropia silk moth. (*See* Silk moth.)
Celery, caterpillar 100
looper 100
Centipede, house 116
Chafer, brown fruit 26, 56
European cock 128
margined leaf 45
melancholy sap 45
rose 56
Chaff scale. (*See* Scale.)
Chain-spotted geometer 104, 130
Chalcis-fly, cloverseed. (*See* Clover.)
Chapin's apple-leaf sewer. (*See* Apple.)
Cheese skipper. (*See* Skipper.)
Cherry-fruit maggot 30
leaf-beetle 30
scale 16, 21, 32, 33
Chicken tick. (*See* Tick.)
Chickweed geometer. (*See* Geometer.)
Chinch bug 55, 63, 77, 127
false 78
Chinese mantis (Soothsayer) 131
"Chin" fly. (*See* Fly.)
Chionaspis, orange. (*See* Scale, scurfy.)
Chlorops, beet. (*See* Beet.)
Chrysobothris, orange. (*See* Orange.)
Cicada, periodical (17-year) 21, 27, 29, 131
Cigarette beetle 83
Circular scale. (*See* Scale.)
Clay-colored bill-bug. (*See* Bill-bug.)
Clear-winged moth. (*See* Currant.)
locust. (*See* Locust.)
Climbing cutworm. (*See* Cutworm.)
Clouded pigweed bug. (*See* Pigweed.)
Cloudless sulphur. (*See* Butterfly.)
Cloudy-wing, northern 72
Clothes moth, case-making 117
webbing 117
Clover, Aleyrodes 67
cutworm 70
flavescent weevil 68
flower midge 74

Page.

Clover, hay worm 73
leaf midge 68
leaf weevil 67
mite 67
plant louse 73
root-borer 66
seed chalcis-fly 61, 74
worm 74
stem-borer 66
worm, green 70
Cockchafer, European 128
Cockroach, American 116
Codling-moth (apple worm) 26, 128
Coffee-bean weevil 7
Colaspis, grape-vine. (*See* Grape.)
Colorado potato-beetle. (*See* Potato.)
Columbia silkmoth. (*See* Silkmoth.)
Comma butterfly. (*See* Butterfly.)
Commelina owlet-moth. (*See* Owlet-moth.)
Common. (*See* Bagworm, Bean weevil, Squash-bug, Wireworm.)
Comyntas butterfly. (*See* Butterfly.)
Cone-headed locust. (*See* Locust.)
nose, blood-sucking 119
Confused flour-beetle. (*See* Flour-beetle.)
Convex flea-beetle. (*See* Flea-beetle.)
Copper, American 72
Corn aphis 55
bill-bugs 51, 52
earworm 41, 56, 81, 86, 96, 97
feeding syrphus-fly 48, 56
leaf-beetle, Southern 46
root aphis 50
webworm 50
worm 51, 67
sap-beetle 113
seed Agonoderus 49
seed-maggot 49
stalk-borer 54, 57
smaller 54
maggot 101
wireworm 51
Cotton aphis 10, 42
boll cutworm 43
weevil, Mexican 42, 128
worm 41, 56, 81, 86, 96, 97
snout-moth 43
stainer 10, 42
worm 42
tachinid 48
Cottony cushion scale. (*See* Scale.)
maple scale. (*See* Scale.)
rose scale. (*See* Scale.)
Cowpea weevil 86
Crab louse. (*See* Louse.)
Crambus, vagabond 50, 59
Cranberry fruit-worm 105
girdler 105
katydid 105
looper 104, 111
scale 16, 21, 30, 33, 105, 110
spanworm 97, 104, 130
worm, yellow-head 104
Cricket, agitating 43
banded 44
house 116

Page

Cricket, leaf-palpus 43
mole-, northern 9
short-winged 91
snowy tree 38, 108
western 62
Cross-striped cabbage-worm. (*See* Cabbage.)
Croton bug. (*See* Bug.)
Crow blister-beetle. (*See* Blister beetle.)
Crown-borer. (*See* Strawberry.)
girdler. (*See* Strawberry.)
moth. (*See* Strawberry.)
Crumpler, rascal leaf 23, 36
Cucumber beetle, striped 99
twelve-spotted. 51, 67, 78, 84, 97, 99
flea-beetle 79, 94, 99
Curculio, apple 27
cabbage 91
plum 27, 32, 129
rhubarb 102
rose 102
Currant clear-wing moth 110
borer, imported 110
moth, dried 112
stem-borer, native 110
worm, imported 111, 129
native 111
Cutworm, bean 85
black 53, 81, 88
bronzed 52, 71
climbing 25
clover 70, 77
cotton-boll 43
dark-sided 52, 71, 101
dingy 53, 85, 88
glassy 53, 88
granulated 58, 81, 87
pretty 81, 98
shagreened 43, 88
small white bristly 70
speckled 88
spotted 53, 59
striped 53, 85, 88
variegated 53, 60, 66, 71, 76, 81, 88
western striped 53
w-marked 53, 88

Dagger, smeared 71, 107, 108
Dark meal-worm. (*See* Meal-worm.)
sided cutworm. (*See* Cutworm.)
Depressed flour-beetle. (*See* Flour-beetle.)
Destructive leaf-hopper. (*See* Leaf-hopper.)
locust. (*See* Locust.)
Mealy-bug. (*See* Mealy-bug.)
Devil, hickory-horned. (See Caterpillar.)
Diamond-back moth. (*See* Moth.)
Differential locust. (*See* Locust.)
Dingy cutworm. (*See* Cutworm.)
Distended May-beetle. (*See* May-beetle.)
Dog and cat, flea. (*See* Flea.)
face butterfly, Southern. (*See* Butterfly.)
orange. (*See* Orange.)
tick, American. (*See* Tick.)
Dried-currant moth. (*See* Currant.)
Drug-store beetle. (*See* Beetle.)
Dungfly, brown 118
Dusky plant-bug. (*See* Plant-bug.)

Page.

Ear fly, black-striped 121
tick, spinose. (*See* Tick.)
worm. (*See* Corn.)
Eggplant flea-beetle. (*See* Flea-beetle.)
Eight-spotted forester. (*See* Forester.)
Elm leaf-beetle 131
spanworm 24
English grain-louse. (*See* Grain.)
Euonymus scale. (*See* Scale.)
Euphoria. (*See* Fruit-chafer, Sap chafer.)
European bean-weevil. (*See* Bean.)
fruit-scale. (*See* Scale.)
grain-louse. (*See* Grain.)
orange scale. (*See* Scale.)
Eyed ladybird. (*See* Ladybird.)
Eye-spotted budmoth. (*See* Budmoth.)
Excrement fly, shining. (*See* Fly.)

Fall army worm. (*See* Army worm.)
cankerworm. (*See* Cankerworm.)
webworm. (*See* Webworm.)
False chinch-bug. (*See* Bug.)
worm. (*See* Strawberry.)
Fickle midge. (*See* Midge.)
Fidia, grapevine. (*See* Grape.)
Fig-eater 26
Fire-worm 103
Flat-headed apple-tree borer. (*See* Apple.)
orange-tree borer. (*See* Orange.)
Flavescent weevil, clover 68
Flea, cat and dog 119, 122
Flea-beetle, banded 84
convex 79, 102
cucumber 79, 94, 99
egg-plant 46, 89, 94
elongate 46
grapevine 40
horse-radish 90
pale-striped 79, 84
punctured 99
red-legged 26
spinach 79
strawberry 106
striped 90
sweet-potato 94
tobacco 82
toothed 79
triangular 79
wavy-necked 79
striped 90
western 90
cabbage 90
Flea-hopper, garden 85
Flea-weevil, apple-leaf. (*See* Apple.)
Florida wax scale. (*See* Scale.)
Flour-beetle, broad-horned 115
confused 114
depressed 115
rust-red 114
small-eyed 115
slender-horned 115
Flour-moth, Mediterranean 111
Flower-beetle, California 103
midge, clover 74
Fluted scale. (*See* Scale.)

Page.

Fly. (*See under* Bot, Chalcis, Ear, Frit, Fruit, Gad, Gall, Saw, and Syrphus.)
Fly, carrot rust 100
chin 121
dung 118
excrement, shining 118
green bottle 118
heel (*see* Ox-bot) 122
Hessian 65, 124
Hippelates 118
horn 122
house 119, 124
little 118
onion 101
robber 48
screw-worm 119, 122
stable 118, 121
vinegar 117, 118
warble 122
white 10, 19
Fodder worm 55
Folder, Chapin's apple leaf 23
grape leaf 40
Forbes scale (cherry scale) 16, 21, 32, 33
Foreign grain-beetle. (*See* Grain beetle.)
Forester, eight-spotted 40, 130
Four-lined leaf bug. (*See* Leaf bug.)
marked leaf-beetle. (*See* Leaf-beetle.)
spotted bean-weevil. (*See* Bean.)
Frit fly, American 65
Fruit chafer, brown 26, 56
fly, Indian 29
maggot, apple 27
cherry 30
mite, orange 9
moth, grape 41
tree bark beetle 20
worm, cranberry 105
green 27
gooseberry 111
Fuller's rose-beetle. (*See* Rose.)

Gadfly, American 121
black 121
black-striped 121
Gallfly, violet 102
maker, blackberry 108
Garden flea-hopper. (*See* Flea-hopper.)
webworm. (*See* Webworm.)
Geometer, chain-spotted 104, 130
chickweed 70
German grain-louse. (*See* Grain.)
Gibbous June-beetle. (*See* June beetle.)
Girdler, cranberry. (*See* Cranberry.)
crown. (*See* Strawberry.)
Glassy cutworm. (*See* Cutworm.)
winged sharpshooter. (*See* Sharpshooter.)
Glover's scale. (*See* Scale.)
Gnat, southern buffalo 119, 120
turkey 120
Golden tortoise-beetle. (*See* Tortoise beetle.)
Gooseberry-borer, black 110
fruit worm 111
spanworm 110

Page.

Grain-beetle, flat 113
foreign 112
merchant 112
red or square-necked 112
saw-toothed 112
borer, large 114
leaf-hopper 64
louse, English 63
European 63
German 63
moth, Angoumois 112
sawfly 64
weevil, broad-nosed 115
Granary weevil 115
Granulated cutworm 58, 81, 87
Grape caterpillar, social 40, 130
fruit-moth 41
leaf-folder 40
Phylloxera 38
gall 125
scale 16, 38
seed-weevil 41, 125
worm 41
Grapevine Colaspis 40, 67, 79
Fidia 39
flea-beetle 40
hog-caterpillar 39, 130
leaf-hopper 41
plume-moth 40
root-borer 38
worm 39
sawfly 40
tomato-gall 125
trumpet-gall 124
Grasshopper. (*See* Locust.)
lubber 9
obscure 44
Grass sawfly. (*See* Sawfly.)
worm, northern 58
Gray comma. (*See* Butterfly.)
hair-streak. (*See* Butterfly.)
striped greenhead. (*See* Greenhead.)
Greedy scale. (*See* Scale.)
Green bottle fly. (*See* Fly.)
clover worm. (*See* Clover.)
fruit-worms 27
Greenhead, common 121
gray-striped 121
Greenhouse leaf-tyer. (*See* Leaf-tyer.)
Green tortoise-beetle. (*See* Tortoise beetle.)
Ground beetle, fiery 46
Subterranean 47
Grub, hop 66
rice 57
white 50, 59, 79, 106
Gipsy moth 25, 36, 130

Hair-streak, gray. (*See* Butterfly.)
Hairy-faced jointworm 64
Ham beetle, red-legged 117
skipper 117
Harlequin cabbage bug. (*See* Cabbage.)
Hawaiian sugar-cane borer. (*See* Sugar-cane.)
Hawk-moth, sweet potato 94
Hay worm, clover 73

Page.

Head louse. (*See* Louse.)
maggot. (*See* Sheep.)
Hemisphærical scale. (*See* Scale.)
Hessian fly. (*See* Fly.)
Hickory-horned devil. (*See* Caterpillar.)
Hippelates fly. (*See* Fly)
Hog-caterpillar. (*See* Grape and Orange.)
Honey bee 128
Hooded plant-bug. (*See* Plant-bug.)
Hop grub 66
plant-louse 32, 65, 125, 126
snout-moth 66
Horn-blower. (*See* Tobacco worm.)
fly. (*See* Fly.)
Horned squash-bug (*see* Squash) 99
Horse bot fly. (*See* Bot fly.)
chestnut scale. (*See* Scale.)
louse, sucking. (*See* Louse.)
radish flea-beetle. (*See* Flea-beetle.)
House centipede. (*See* Centipede.)
cricket. (*See* Cricket.)
mosquito. (*See* Mosquito.)
fly. (*See* Fly.)
little. (*See* Fly,)

Imported cabbage leaf-miner. (*See* Cabbage.)
webworm. (*See* Cabbage.)
worm. (*See* Cabbage.)
currant-borer. (*See* Currant.)
worm. (*See* Currant.)
pea-moth. (*See* Pea.)
Imbricated snout-beetle. (*See* Snout-beetle.)
Indian Euphoria (brown fruit chafer) 26
fruit-fly. (*See* Fruit-fly.)
meal moth. (*See* Moth.)
silkmoth, giant. (*See* Silkmoth.)
Io moth. (*See* Moth.)
Isabella tiger-moth 59, 72, 77

Japanese silkmoth. (*See* Silkmoth.)
Joint worms 64
hairy-faced 64
wheat 64
Jorulla silkmoth. (*See* Silkmoth.)
June beetle (fig-eater) 26
gibbous 50, 68, 78

Katydid, cranberry 105
angular-winged 9, 104, 131
Kissing bug 129

Ladybird, Asiatic 17, 127
Australian 13, 129
bean 84
blood red 18, 25, 48, 63, 92
eyed 18, 48
squash 99
twice-stabbed 18, 48, 92
Larder beetle. (*See* Beetle.)
Leaf-beetle, bean 83
cherry 30
elm 131
four-marked 109

Page.

Leaf-beetle, rose 103, 107
southern corn 46
strawberry 106
spotted 106
sugar-beet, greater 78
lesser 78
bug, four-lined 68
chafer, margined 45
crumpler, rascal 23, 36
cutter, morning-glory 102
cutting ant 42
folder, apple 23
grape 40
hopper, brown 78
destructive 64
grain 64
grapevine 41
midge, clover 68
miner, apple 24
beet 75
imported cabbage 91
parsnip 100
mining, locust-beetle 84
notcher orange 8
palpus cricket 43
Pegomya, beet 75
roller, oblique-banded 23, 69
orange 8
raspberry 107, 108
red-banded 68, 98
strawberry 107, 109
sewer, Chapin's apple 23
skeletonizer, apple 23
tyer, greenhouse 100, 102
weevil, clover 67
Leather-colored locust. (*See* Locust.)
jacket 60
Lemon silver mite 9
Lentil weevil. (*See* Weevil.)
Leopard moth, great. (*See* Moth.)
Lesser locust. (*See* Locust.)
wheat-straw maggot. (*See* Wheat.)
Lima-bean stem-borer. (*See* Bean.)
Lime-tree winter-moth. (See Moth.)
Linden scale. (*See* Scale.)
Little black ant. (*See* Ant.)
green tortoise beetle. (*See* Tortoise beetle.)
house fly. (*See* Fly.)
negro-bug. (*See* Negro-bug.)
red ant. (*See* Ant.)
sulphur. (*See* Butterfly.)
Livid wireworm. (*See* Wireworm.)
Locust. (*See* Cicada, 17-year locust.)
American 43, 55, 61
beetle, leaf-mining 84
Carolina 60, 75
clear-winged 62
cone-headed 44
differential 54, 61, 74, 75
leather-colored 104
red-legged 54, 62, 74, 75, 96
Rocky Mountain 55, 61, 62, 74, 75
two-striped 54, 61, 73, 75, 96, 104
Lone-star tick. (*See* Tick.)

Page.

Long-nosed ox-louse. (*See* Louse.)
scale. (*See* Scale.)
spined mealy-bug. (*See* Mealy-bug.)
Looper. (*See* Cabbage, Celery, Cranberry.)
lunate 130
Louse. (*See under* Aphis, Grain-louse, Plant-louse.)
body 120
book 116
cattle 123
crab 120
head 120
horse, sucking 122
ox, long-nosed 122
short-nosed 122
sheep 123
Lubber grasshopper. (*See* Grasshopper.)
Luna silkmoth. (*See* Silkmoth.)
Lunate looper. (*See* Looper.)

Maggot. (*See* Apple, Cabbage, Cherry, Corn, Sheep, and Wheat.)
Malaria mosquito. (*See* Mosquito.)
Maple dagger moth 130
worm, spring 130
Margined blister-beetle. (*See* Blister-beetle.)
leaf-chafer. (*See* Leaf-chafer.)
May beetle 50, 59, 79
distended 59, 84
Meadow worm. (*See* Worm.)
Meal sap-beetle. (*See* Sap-beetle.)
snout-moth. (*See* Snout-moth.)
Meal worm, dark 113
yellow 114
Mealy-bug, destructive 10, 13
long-spined 11, 13
wing (white fly) 10, 19
Mediterranean flour-moth. (*See* Flour.)
Melancholy sap chafer. (*See* Sap chafer.)
Melon caterpillar. (*See* Caterpillar.)
Merchant grain-beetle. (*See* Grain.)
Mexican bean-weevil. (*See* Bean.)
botfly. (*See* Botfly.)
cotton-boll weevil. (*See* Cotton.)
Military bug. (*See* Bug.)
Millipede, ringed 91
Miner. (*See* Asparagus and Leaf-miner.)
Midge, clover-flower. (*See* Clover.)
clover-leaf. (*See* Clover.)
fickle 102
Mite. (*See* Clover, Orange, Pear.)
orange fruit 9
pear blister 31, 37
Mole-cricket, northern 9
short-winged 91
Morning-glory leaf-cutter. (*See* Leaf-cutter.)
Mosquito, house 119
malarial 118, 124
salt-marsh 124
yellow-fever 118, 124
Moth. (*See under* Bud, Clothes, Flour, Fruit, Hawk, Grain, Owlet, Plume, Snout, and Tiger.)
blue-spangled peach 29
brown-tail 25, 35, 130

Page.

Moth, clothes 117
codling 26, 128
currant clearwing 110
diamond-back 89
dried-currant 112
great leopard 45
gipsy 25, 36, 130
imported pea 87
indian-meal 112
lime-tree winter- 24
Mediterranean flour 111
io 25, 45, 70, 130
peach-twig 29, 36
strawberry crown- 106
stigma 130
tapestry 117
white-marked tussock 24, 28, 35
wolf 111
Mottled tortoise-beetle. (*See* Tortoise-beetle.)
Mourning cloak. (*See* Butterfly.)

Nais tiger-moth. (*See* Tiger-moth.)
Native currant stem-borer. (*See* Currant.)
currant worm. (*See* Currant.)
peach bark-beetle. (*See* Peach.)
Negro-bug, little 101, 109
Netted tick. (*See* Tick.)
New York weevil. (*See* Weevil.)
Northern cloudy-wing. (*See* Butterfly.)
corn bill-bug. (*See* Corn.)
grass-worm. (*See* Worm.)
leaf-footed plant-bug. (*See* Plant-bug.)
mole-cricket. (*See* Cricket.)
tobacco worm. (*See* Tobacco.)
Nuttall's blister-beetle. (*See* Blister-beetle.)

Oak ambrosia beetle. (*See* Ambrosia.)
tussock caterpillar 130
Oblique-banded leaf-roller. (*See* Leaf-roller.)
Obscure grasshopper. (*See* Grasshopper.)
Oleander scale. (*See* Scale.)
Onion fly 101
maggot, barred-winged 55
Thrips 82, 101
Orange aphis 10
case-bearer 9
Chionaspis 8, 12, 15
Chrysobothris 8
dog (hog caterpillar) 8
fruit-mite 9
leaf-notcher 8
roller 8
rust-mite 9, 129
sawyer 8
sulphur 72
white spot 9
Orizaba silkmoth. (*See* Silkmoth.)
Owlet-moth. (*See* Cotton-boll cutworm.)
commelinæ 71, 81, 95
Ox-bot 122
louse, long-nosed 122
short-nosed 122
Oyster shell bark-louse. (*See* Scale.)

Page.

Pacific coast silkmoth. (*See* Silkmoth.)
Pale-striped flea-beetle. (*See* Flea-beetle.)
Palm scale. (*See* Scale.)
Pan-American Platypus. (*See* Platypus.)
Parsley root-borer 101
Parsnip butterfly 130
leaf-miner 100
webworm 100
Pea moth, imported 87
weevil 86
Peach aphis, black 35
bark-beetle, native 29
moth, blue-spangled 29
scale 30, 32
West Indian 15, 34
tree borer 29, 36
twig moth 29, 36
Pear-blight beetle 20, 31
blister-mite 31
borer, sinuate 32
Psylla 31, 37
shot-borer 31
lug 31
Pegomya, beet-leaf 75
Penciled snout-beetle. (*See* Snout-beetle.)
Periodical cicada. (*See* Cicada.)
Phyllira tiger-moth. (*See* Tiger-moth.)
Phylloxera. (*See* Grape.)
Pickle worm 98
Pigweed bug, clouded 77
Pin borer (apple wood stainer) 19
Pistol case-bearer. (*See* Case-bearer.)
Plant-bug, dusky 44, 107
four-lined 68
hooded 10, 78, 109
northern leaf-footed 98
southern leaf-footed 10, 44
tarnished 68, 77, 89
timothy 60
Plant-louse. (*See under* Aphis.)
cabbage 91
clover 73
hop 32, 65, 125, 126
Platypus, Pan-American 7
Plum curculio 27, 32
gouger 32
Plume-moth, grape-vine 40
sweet potato 94
Polyphemus silk moth. (*See* Silk moth.)
Potato beetle, bogus 93
Colorado 92
three-lined 93
Potato stalk-weevil 92
tuber-worm 82
Pot-herb butterfly. (*See* Butterfly.)
Pretty cutworm. (*See* Cutworm.)
Prionus, tile-horned 37
Prometheus silk moth. (*See* Silk moth.)
Pruner, apple-tree. (*See* Apple.)
Psylla. (*See* Pear.)
Punctured flea-beetle. (*See* Flea-beetle.)
Purple scale. (*See* Scale.)
Purslane bug 77
caterpillar 76
Putnam's scale. (*See* Scale.)
Pyralid, cauliflower 90

Page.

Rascal leaf-crumpler. (*See* Leaf-crumpler.)
Raspberry cane-borer 108
leaf-roller 107, 109
root-borer 107
sawfly 108
spanworm 109
Rearhorse, Carolina 47, 131
Chinese 131
Red-banded leaf-roller. (*See* Leaf-roller.)
Red bug (*Dysdercus*) 10, 42
(*Leptus*) 120
Red grain-beetle. (*See* Grain.)
Red-legged flea-beetle. (*See* Flea-beetle.)
ham-beetle. (*See* Ham.)
locust. (*See* Locust.)
necked cane-borer. (*See* Cane-borer.)
shouldered twig-borer. (*See* Twig-borer.)
spider, two-spotted 9, 103
turnip beetle. (*See* Turnip.)
Resplendent shield-bearer. (*See* Shield-bearer.)
Rhubarb curculio 102
Rice grub 57
stalk-borer 57
water-weevil 58
weevil 57
Ringed millipede. (*See* Millipede.)
Robber fly. (*See* Fly.)
Rocky Mountain locust. (*See* Locust.)
Roller worm. (*See* Worm.)
Root aphis, corn. (*See* Corn.)
-borer, clover. (*See* Clover.)
grave-vine. (*See* Grape.)
parsley. (*See* Parsley.)
raspberry. (*See* Raspberry.)
sweet potato 94
webworm, corn. (*See* Corn.)
worm, grape-vine. (*See* Grape.)
Rose beetle, Fuller's 7, 102
budworm 102
chafer 56
curculio 102
leaf-beetle 103, 107
scale 15, 34
cottony 103
Round-headedapple-treeborer. (*See* Apple.)
Rust-fly. (*See* Carrot.)
mite. (*See* Orange.)
red flour-beetle. (*See* Flour-beetle.)
Rusty brown Tortrix. (*See* Tortrix.)

Saddle-back. (*See* Caterpillar.)
Salt-marsh. (*See* Caterpillar.)
Sandy ground bug. (*See* Bug.)
San Jose scale. (*See* Scale.)
Sap-beetle, corn. (*See* Corn.)
meal 113
chafer, melancholy 45
Sawfly, grain 64
grape-vine 40
grass 64
larger sweet-potato 94
raspberry 108
violet 102
Sawtoothed grain-beetle. (*See* Grain-beetle.)

Page.

Sawyer, orange. (*See* Orange.)
Scale, azalea bark 103
barnacle 11, 13
black 11, 15, 22
California red 12, 18
chaff 13, 18
cherry 16, 21, 32, 33
circular 12, 17
cottony cushion 10, 13
maple 14, 38
rose 103
cranberry 16, 21, 30, 33, 105, 110
Euonymus 103
European fruit 16, 22, 34
Florida wax 11, 14
fluted 10, 13, 128
Forbes's 16, 21, 32, 33
Glover's 13, 18
grape 16
greedy 17, 21, 34
hemispherical 11, 14
horse-chestnut 15
linden 16
long 13, 18
oleander 12, 17
oyster-shell bark-louse 18, 22, 32
palm 17
peach 30, 32
purple 12, 18
Putnam's 16, 21, 30, 33, 105, 110
rose 15, 34
San Jose 17, 21, 30, 33, 110, 127
scurfy, apple 15, 22, 31, 33
orange 15
soft 11, 14
terrapin 14, 109
walnut 16, 34
West Indian peach 15, 34
Screw-worm fly 119, 122
Scurfy bark louse. (*See* Scurfy scale.)
Seed, clover, chalcis-fly. (*See* Clover.)
corn Agonoderus. (*See* Corn.)
maggot. (*See* Corn.)
midge. (*See* Clover flower midge.)
worm, clover. (*See* Clover.)
grape. (*See* Grape.)
weevil, grape 41, 125
Semicolon. (*See* Butterfly.)
Sharpshooter, glassy-winged 42
waved 41
Shagreened cutworm. (*See* Cutworm.)
Sheep botfly 122
head maggot 122
louse 123
tick 122
Shield-bearer, resplendent 22
Shining excrement fly. (*See* Fly.)
Short-nosed ox-louse. (*See* Louse.)
Shot borer. (*See* Borer.)
Shot-hole borer. (*See* Apple.)
Silkmoth angulated 131
calleta 130
cecropia 25
Columbia 131
cynthia 130, 131
Giant Indian 131

Page.

Silk moth, Japanese 131
Jorulla 130
luna 130, 132
Orizaba 130
Pacific-coast 132
polyphemus 130, 132
prometheus 130, 131
Silkworm 125, 132
Silver fish 116
mite. (*See* Lemon.)
Six-spotted tiger-beetle. (*See* Tiger-beetle.)
Skiff caterpillar. (*See* Caterpillar.)
Skipper, ham or cheese 117
Sinuate pear borer. (*See* Pear.)
Six-spotted tree-hopper. (*See* Tree-hopper.)
Slender-horned flour-beetle. (*See* Flour-beetle.)
Slug. (*See* Pear.)
Smaller corn-stalk borer. (*See* Corn.)
Small-eyed flour-beetle. (*See* Flour-beetle.)
Small white cutworm. (*See* Cutworm.)
yellow ant. (*See* Ant.)
Smeared dagger 71, 107, 108
Snout-beetle, imbricated 26, 67, 78, 84
penciled 78
moth, cotton 43
hop 66
meal 73, 112
raspberry 43
Snowy tree-cricket. (*See* Cricket.)
Social grape caterpillar. (*See* Grape.)
Soft scale. (*See* Scale.)
Soldier-bug, three-spotted 44
Soothsayer. (*See* Rearhorse.)
Southern buffalo gnat. (*See* Gnat.)
cabbage-worm. (*See* Cabbage.)
chicken tick. (*See* Tick.)
dog face. (*See* Butterfly.)
grass worm. (*See* Worm.)
leaf-footed plant-bug. (*See* Plant-bug.)
tobacco worm. (*See* Tobacco.)
Spanworm, cranberry 104, 130
elm 24
gooseberry 110
raspberry 109
Speckled cutworm. (*See* Cutworm.)
Sphinx, Abbot's 39
achemon 39
white-lined 76
Spider-beetle, brown 114
white-marked 114
Spinach flea-beetle. (*See* Flea-beetle.)
Spindle worm. (*See* Worm.)
Spinose ear-tick. (*See* Tick.)
Split-worm. (*See* Tobacco.)
Spotted blister-beetle. (*See* Blister-beetle.)
cutworm. (*See* Cutworm.)
strawberry leaf-beetle. (*See* Leaf-beetle.)
Spring canker-worm. (*See* Canker-worm.)
maple worm. (*See* Maple worm.)
Square-necked grain-beetle. (*See* Grain.)
Squash-bug, common 98
horned 98
Squash-bug, ladybird 98

Page.

Squash-bug, vine borer 98
Stable fly. (*See* Fly.)
Stainer, cotton. (*See* Cotton.)
Stalk-borer 54, 62, 92, 95
corn 54, 57
smaller 54, 83
rice 57
Stalk-weevil, potato 92
tobacco 82
Stem-borer, clover 66
lima bean 83
native currant 110
Stigma moth. (*See* Moth.)
Stinging caterpillar. (*See* Caterpillar.)
Strawberry crown-borer 106
girdler 105
moth 106
false worm 106
flea-beetle 106
leaf-beetle 106
spotted 106
chafer 106
roller 106, 109
root-borer 106
weevil 106
Straw-worm, barley 64
greater wheat 64
Striped blister-beetle. (*See* Blister-beetle.)
cucumber-beetle. (*See* Cucumber.)
flea-beetle. (*See* Flea-beetle.)
Subterranean ground beetle. (*See* Beetle.)
Suck fly. (*See* Tobacco.)
Sucking horse louse. (*See* Louse.)
Sugar-beet webworm. (*See* Webworm.)
Sugar-cane beetle 57
borer 54, 57
Hawaiian 57
pin-borer 57
Sulphur, cloudless. (*See* Butterfly.)
colored Tortrix 69, 98
little. (*See* Butterfly.)
orange. (*See* Butterfly.)
Sweet-potato flea-beetle 94
hawk-moth 94
plume-moth 94
root-borer 94
sawfly, larger 94
Swollen May-beetle. (*See* May-beetle.)
Syrphus-fly, corn-feeding. (*See* Corn.)

Tachinid, cotton worm 48
Tarnished plant bug. (*See* Plant bug.)
Tapestry moth. (*See* Moth.)
Tenacious bill-bug. (*See* Bill-bug.)
Ten-spotted Xanthonia. (*See* Xanthonia.)
Tent-caterpillar. (*See* Apple.)
Terrapin scale. (*See* Scale.)
Thick-thighed walking stick. (*See* Walking stick.)
Three-lined potato beetle. (*See* Potato beetle.)
spotted soldier bug. (*See* Soldier bug.)
Thrips, onion 82, 101
tobacco 82, 101
wheat 67

Page.

Tick, American dog 123
castor-bean 123
cattle 123
lone star 123
netted 123
sheep 122
southern chicken 123
spinose ear 123
Tiger-beetle, Carolina 47
six-spotted 47
Tiger-moth, arge 52
isabella 59, 72, 77
nais 58, 71
phyllira 45
Tile-horned Prionus. (*See* Prionus.)
Timothy plant bug. (*See* Plant bug.)
Tobacco budworm 81
flea-beetle 82
split-worm 82
stalk-weevil 82
suck-fly 82
Thrips 82, 101
worm, Northern 80, 95
Southern 80, 95
Tomato-gall, grape-vine 125
Tomato worm 80, 95
Toothed flea-beetle. (*See* Flea-beetle.)
Tortoise-beetle, argus 95
black-legged 95
golden 92
green 95
little green 92
mottled 94
two-striped 95
Tortricid in apple fruit. (*See* Apple.)
Tortrix, rusty brown 56, 69
sulphur-colored 69, 98
Tree borer, flat-headed. (*See* Apple, Orange.)
peach. (*See* Peach.)
cricket, snowy. (*See* Cricket.)
hopper, buffalo 20, 35
six-spotted 44
Triangular flea-beetle. (*See* Flea-beetle.)
Trumpet-gall, grape-vine 124
Tuber worm. (*See* Potato.)
Turkey gnat. (*See* Gnat.)
Turnip-beetle, red 90
Tussock-caterpillar, oak 130
white-marked .. 24, 28, 35, 130
moth. (*See* White-marked tussock-caterpillar.)
Twelve-spotted asparagus beetle. (*See* Asparagus.)
cucumber beetle. (*See* Cucumber.)
Twice-stabbed ladybird. (*See* Ladybird.)
Twig-beetle. (*See* Apple.)
borer. (*See* Apple.)
red-shouldered 38
Two-spotted red spider. (*See* Red spider.)
striped locust. (*See* Locust.)
tortoise-beetle. (*See* Tortoise-beetle.)
walking-stick. (*See* Walking-stick.)
Tyer, greenhouse leaf. (*See* Leaf-tyer.)

Page.

Vagabond Crambus. (*See* Crambus.)
Varied Anomala. (*See* Anomala.)
Variegated cutworm. (*See* Cutworm.)
Vinegar fly 117, 118
Vine-worm 105
Violet, black or brown aphis 103
gall-fly 102
saw-fly 102

Walking-stick, thick-thighed 43
two-striped 9, 31, 131
Walnut scale. (*See* Scale.)
Warble fly 122
Water-weevil. (*See* Weevil.)
Waved sharpshooter. (*See* Sharpshooter.)
Wavy-necked flea-beetle. (*See* Flea-beetle.)
striped flea-beetle. (*See* Flea-beetle.)
Webworm, alfalfa 60
corn-root 50
fall 25, 35, 108, 130
garden 69, 76, 87
imported cabbage 91
parsnip 100
sugar-beet 77
Weevil. (*See under* Apple, Bean, Cotton, Grain, Rice, and Strawberry.)
clover-leaf 67
coffee bean 7
cowpea 86
granary 115
grape, seed 41
lentil 86
New York 20
pea 86
water 58
Western cabbage flea-beetle. (*See* Flea-beetle, cabbage.)
corn-root worm. (*See* Corn.)
cricket. (*See* Cricket.)
flea-beetle. (*See* Flea-beetle.)
striped cutworm. (*See* Cutworm.)
West Indian mole-cricket. (*See* Cricket.)
peach scale. (*See* Scale.)
Wheat false caterpillar 64
head army-worm 62
joint worm 64
stem maggot, greater 60, 65
straw maggot, lesser 65
worm, greater 64
Thrips 67

Page.

Wheat wireworm 50, 101
Wheel-bug 47
White ant 103
blister-beetle. (*See* Blister-beetle.)
fly 10, 19
grub (June beetle) 59, 106
(May beetle) 50, 79
lined Sphinx. (*See* Sphinx.)
marked spider beetle. (*See* Spider-beetle.)
tussock-caterpillar. (*See* Caterpillar.)
spot. (*See* Orange.)
Wireworm, common 51
corn 51
livid 46
wheat 50, 101
Winter-moth, lime-tree 24
W-marked cutworm. (*See* Cutworm.)
Wolf-moth. (*See* Moth.)
Wood-nymph, beautiful 39, 130
stainer. (*See* Apple.)
Woolly aphis. (*See* Apple.)
Worm. (*See under* Apple, Armyworm, Bud, Cabbage, Canker, Clover, Corn, Cotton, Cranberry, Currant, Cutworm, Fire, Fruit, Joint, Meat, Root, Spanworm, Tobacco, and Tomato.)
fodder 55
meadow. (*See* Leather-jacket.)
pickle 98
roller 85, 130
spindle 53
tobacco split. (*See* Tobacco.)
potato tuber. (*See* Potato.)

Yellow-bear caterpillar. (*See* Caterpillar.)
black-bordered. (*See* Butterfly.)
butterfly. (*See* Butterfly.)
fever mosquito. (*See* Mosquito.)
headed cranberry worm. (*See* Cranberry.)
meal worm. (*See* Meal.)
necked caterpillar. (*See* Caterpillar.)

Xanthonia, ten spotted 26

Zebra caterpillar. (*See* Caterpillar.)

O